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Bulletin

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Diseases of the Heart. By Dr. Henri Vaquez, Professor of the Faculty of Medicine of Paris. Translated and edited by George F. Laidlaw, M.D., Associate Physician to the Fifth Avenue Hospital, New York City. Introduction by Wm. S. Thayer, M.D., Professor Emeritus of Medicine, Johns Hopkins University. Octavo of 743 pages, illustrated. Cloth, $8.50 net

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A STUDY OF THE CLINICAL COURSE OF GENERALIZED EDEMA

WITH SUGGESTIONS AS TO ITS POSSIBLE FUNCTION *

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WINNETKA, ILL.

From a perusal of current literature, it appears that generalized edema is usually looked on as an unfavorable symptom, or as a complication occurring in disease. Observation of cases of edema in children prompted the thought that sufficient consideration has not been given to the possibility that edema may be more than this, that it may be a pathologic process tending to follow a definite course. Since most pathologic processes are now quite generally considered to have protective or curative functions, it seemed not unlikely that generalized edema might also in some way have a purpose.

About two years ago, in discussing with me the treatment of an edematous patient, Dr. Joseph Brennemann protested against fluid restriction, saying that he did not see how this could do a toxic patient any good. On consideration, this protest seemed well founded, although I had previously felt that fluid restriction combined with dehydrating measures was a necessary part of treatment. It later appeared that if free administration of fluids was indicated, and if edema was thereby increased, possibly the edema might have a protective or curative purpose. Thus, clinical reasoning led to a conception of the function of edema very similar to that arrived at from purely theoretical considerations.

The disease called tubular or parenchymatous nephritis, or nephrosis, presents a relatively simple type of edema, in that it is uncomplicated by the cardiac factor so often seen in other kinds. It was hoped that clinical observations on the gross location of fluid during successive stages of the disease might lead to information as to the nature and possibly as to the purpose of edema.

While edema is defined as a collection of abnormally large amounts of fluid in the tissues, its precise location and the methods of its development and removal are questions over which there is much disagreement. All concede that fluid passes from the blood into the tissues; but whether it goes into the cells, into the interspaces, or into both is a point of great importance which is still debated. It was with these points in mind that the observations recorded here were made.

It is the purpose of this study, therefore, to (1) report observations made on the clinical course of generalized edema seen in three cases of a simple type, nephrosis; (2) discuss a possible explanation of these findings; (3) call attention to the fact that the conception that edema may have a function is entirely compatible with its clinical behavior, and (4) point out the influence such reasoning might have on therapy.

It will be noted that these three cases of nephrosis had the following points in common:

1. Recurring attacks of generalized edema, going on to the formation of serous effusions, and eventually to recovery.
2. Pyogenic infections preceding or accompanying each attack.
3. Oliguria and marked albuminuria with each attack.
4. Absence of cardiovascular disease.
5. Absence of arterial hypertension.
6. Absence of attacks of convulsive uremia.
7. Normal or but slightly elevated readings on the blood nitrogen elements.
8. Increase in the blood cholesterol in the two cases so examined.

During the last two years, these three patients, while under hospital observation, have suffered eleven major attacks of generalized edema, six of which were observed closely enough to be of value in this study. In making observations, an effort was made to note the time at which noticeable changes in the location and amount of fluid took place. Therefore, the dates of maximum subcutaneous edema and of greatest serous effusion were recorded. The time of maximum subcutaneous edema was taken to be the day on which the eyelids were most swollen, since it was seen that where ascites was marked, the edema of the legs persisted long after that of the upper part of the body had disappeared. It was suggested in a previous paper,[1] that this was due to circulatory disturbances dependent on the ascites. The ascites was selected as the index to the amount of serous effusion, because it could be most easily observed, and its maximum point more accurately determined. While inaccuracies due to the personal element are possible in any such estimations, in no case here could the error have been sufficient to change the sequence of events recorded.

It is realized that it is dangerous to draw conclusions from so few cases. It is hoped, however, that in view of the present uncertainty as to this question, it is not presumptuous to point out possible deductions from rather simple clinical observations. Some of the findings are very significant, and seem to add support to an hypothesis presented by Dr. W. B. McClure and myself in a previous paper.[1] Here we stated that the fact that intradermally injected salt solution was absorbed more rapidly from the skin of edematous parts than from

* Read before the Chicago Society of Internal Medicine, Nov. 24, 1924.

1. Aldrich, C. A., and McClure, W. B.: The Intradermal Salt Solution Test, J. A. M. A. 82: 1425-1428 (May 3) 1924.

that of normal ones seemed to give support to the theory of M. H. Fischer's [2] that "the cause of edema resides in the tissues." The suggestion was added that, since in our experience with children these attacks of edema have always been associated with infectious processes, possibly the intoxication resulting from such infections [3] might so affect the tissue colloids that their affinity for water was increased, thus causing edema.

REPORT OF CASES

Following are histories of the three patients, illustrating the course of edema in two attacks in each, with notes emphasizing the important points. The

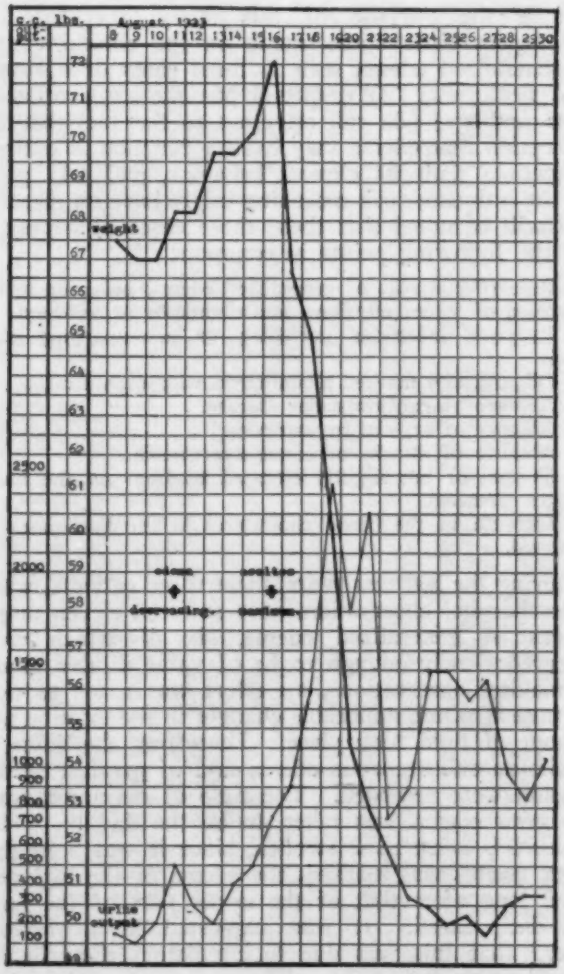
Sp. gr.
Lbs.
August, 1923
8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
weight
edema decreasing
weight continues
urine output

Chart 1 (Case 1).—Course from August 8 to August 30.

charts show the weight and urinary output curves, and indicate the rise and fall of subcutaneous edema and of serous effusions.

CASE 1 (Charts 1 and 2).—V. C., a boy, aged 8 years, entered, Aug. 7, 1923, because of generalized edema and scanty urination. The onset was insidious three weeks previously, the parents noting the swelling of the face first, and later that of the feet. There was no history of an immediately preceding "cold" or sore throat, although the physical examination showed an infected throat. The boy had nosebleed the day before admission. He voided three times daily, his appetite was good, and his bowels were regular. There was a previous history of measles and occasional sore throats. Physical examination revealed a marked generalized edema with effusions in the abdomen and both pleural cavities, carious teeth, reddened tonsils, injected pharyngeal and nasal mucosa, normal heart, and a blood pressure of 110 systolic and 78 diastolic. Laboratory examination showed the urine to contain 4 plus albumin, many leukocytes, but no red cells or casts. Chemical examination of the blood showed: nonprotein nitrogen, 40; blood urea nitrogen, 24; creatinin, 1.15. The Wassermann and Pirquet tests were negative.

The patient was put to bed with the usual treatment of hot packs, cathartics, alkalis, moderate fluid restriction, and a low protein diet. After a preliminary gain in weight, he began to improve, and by August 22 he was edema free, although the urine contained albumin and occasionally casts. Although he seemed well, the urinary findings persisted, and about October 9 he again began to swell. October 15, through a misunderstanding of orders, the tonsils and adenoids were removed under ether, following which he grew rapidly more edematous. An erysipelas-like, red swelling appeared in the lower left eyelid, which gradually developed into an abscess, which was incised and drained, October 25. Two days later his weight began to drop, and in five days he was free from edema, and the urine was normal. He has remained well since that time. It was the opinion of the rhinologists consulted that the abscess was formed from an ethmoid sinusitis rupturing through the orbit.

The weight had almost reached its highest point before entrance. It would appear from the data given by the parents that, while it took more than three weeks for the weight to reach its maximum, it was less than one week in subsiding. It will be seen in Chart 1 that on August 12, the subcutaneous edema was noticeably reduced, after which the weight and ascites increased for five days. Diuresis began several days after the subcutaneous edema was reduced, and came suddenly with the elimination of very large amounts of urine. The maximum weight and greatest ascites coincided.

Chart 2 shows the course of the attack which terminated with the drainage of the abscess. Increase in weight is seen to be very gradual as compared with its reduction, although the date of noticeable reduction of subcutaneous edema is almost exactly at the midpoint of the attack. Again, subcutaneous edema was reduced before diuresis set in, and before weight and ascites reached their maximum points. Diuresis was very sudden in its onset. The most marked ascites slightly preceded the greatest weight.

CASE 2 (Charts 3 and 4).—W. B., a boy, aged 4 years, entered, April 7, 1924, with pronounced generalized edema and ascites. The attack began four days previously with a "cold," and the edema had not been noted until the day previous to admission. Urination was very scanty. Previously there had been three attacks of edema, one at the age of 1 week, from which the child recovered in three weeks, and two during the previous year, both of which followed "colds." During these attacks he had little strength or appetite. At 3 months he had convulsions (no edema), and at 2½ years, measles. He had had frequent "colds." The child was very sick and dopey, with marked edema, ascites and slight fever. There was tonsillitis, double otitis media, cervical adenitis, and a purulent discharge from the nose. The heart and lungs were normal. The blood pressure was normal. Laboratory examination showed the urine to contain 4 plus albumin, many casts and leukocytes, but no red cells. The Wassermann test was negative. Chemical examination of the blood showed: nonprotein nitrogen, 28; blood urea nitrogen, 12, and cholesterol, 282.

The next day, paracentesis of both ear drums was done. Other treatment was approximately as outlined in the previous case. The boy rapidly improved, so that on the eighth day he was free from edema, having lost 5 pounds (2.3 kg.). Ten days later the edema recurred, associated with another ear infection, which required paracentesis. This attack also was of short duration, but differed from the first, in that the loss in weight following it was less and much more gradual. Since that time, May 15, his weight has been stationary except during a short attack of edema one month ago associated with another "cold." While there is now no demonstrable pitting, he looks pale and puffy, and there is considerable

2. Fischer, M. H.: Oedema and Nephritis, New York, John Wiley & Sons, 1921.
3. Marriott, W. M., and Clausen, S. W.: Intoxications Associated with the Physicochemical Equilibria of the Body Cells and Fluids, Proc. Am. Ped. Soc., 1923, p. 205.

fluid in the abdomen. I believe that his tissues contain an abnormal amount of fluid. This opinion is supported by the results of the intradermal salt solution test,[4] which show a disappearance time of from thirty to forty minutes for the injected salt solution, whereas the normal time is more than sixty minutes. The urine still contains albumin in large amounts, many casts and leukocytes, and functional tests show a high fixation of specific gravity and delayed water excretion. The tonsils and adenoids were removed, May 22,

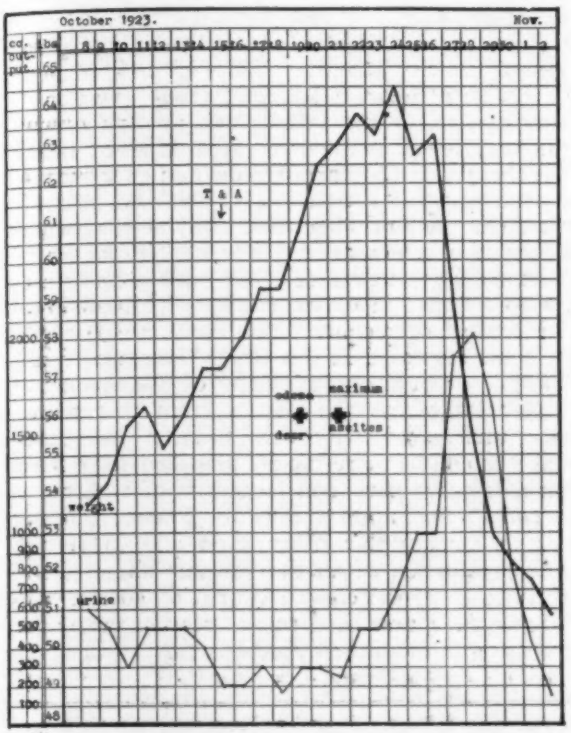

Chart 2 (Case 1).—Course of attack.

at which time pus was aspirated from the left antrum. Cultures from this yielded *Staphylococcus albus*. July 28, openings were made from the nose into both antrums. Various treatments aimed at the chronic nasal condition are being tried out, but at present there is no change.

In this instance, while the subsidence of subcutaneous edema only slightly preceded the maximum development of ascites, it preceded diuresis fully four days. Here, again, the most marked ascites coincided closely with the greatest weight (Chart 3). In this case the loss in weight was greatly hastened by profuse sweats, and the urinary output continued low until the weight had almost returned to normal. There was no sudden diuresis.

Chart 4 illustrates another attack seen from the onset. Subcutaneous edema diminished four days before diuresis began. The maximum weight and greatest ascites coincided three days after decrease of subcutaneous edema. Diuresis was gradual, leading to incomplete drainage of edema fluid, as there is still fluid in the abdomen, and the tissues probably contain more than their normal amount.

CASE 3 (Charts 5 and 6).—S. S., a girl, aged 3 years, entered first, June 18, 1922, with generalized edema and ascites. The onset occurred two weeks previously with cough. One week before admission she began to swell, the face and legs first, followed by a rapid swelling of the abdomen during the last two or three days. The urine looked "like beer," and there had been abdominal pain in the last few days. The child had had measles at 2½ years, and a cough with sore throat three months before admission, lasting one week. Physical examination showed a moderate subcutaneous edema, marked ascites and bilateral pleural effusions, a red throat, nasal discharge, normal heart, and a few coarse râles in the chest. The mentality was clear and the blood pressure was 90 systolic and 50 diastolic. The laboratory examination showed the urine to contain 4 plus albumin, many leukocytes, few casts, and no red cells. It was acid and of high specific gravity. Chemical examination of the blood showed: nonprotein nitrogen, 36; blood urea nitrogen, 18; uric acid, 3.6; creatinin, 1.2, and cholesterol, 203. Nasal cultures were negative for diphtheria. Roentgenograms of the nasal sinuses were negative. The Wassermann and Pirquet tests were negative.

Under routine treatment, after a slight rise in weight, she improved, and by the end of three weeks was apparently well. Since that time, I have seen this patient in seven other attacks of extreme edema. The tonsils and adenoids were removed, Dec. 20, 1923, and a second adenoidectomy was performed, May 16, 1924, at which time pus was aspirated from the left antrum. A pure culture of *Staphylococcus albus* was obtained from this. After this procedure, she remained clinically well for a few weeks, but returned again with marked albuminuria. After several days' observation in the hospital, to make sure that this was not transient, both antrums were opened from the nose by Dr. Thomas Galloway, July 8. The next day, and for the remainder of her stay in the hospital, we were unable to find albumin in the urine. However, during the last week in September, she entered with moderate edema, high fever and lobar pneumonia, and died in four days. The edema entirely disappeared two days before death. Necropsy was not permitted.

On admission, while the serous effusions were large, the edema was moderate; in fact, it was diminishing (Chart 5). The maximum weight and greatest ascites, however, were not attained for several days. Diuresis began seven days later. Twice, after the subcutaneous edema began to subside, abdominal paracentesis was resorted to. For some reason, loss of weight in this attack was interrupted, so that after a rapid loss of 6½ pounds (2.9 kg.) in four days, it became stationary, increased slightly, and then dropped 6¼ pounds (3 kg.) in five days. At the end of this period, the urine was alkaline, free from albumin or casts, and there was no demonstrable edema or effusion.

Chart 6 illustrates again subcutaneous edema diminishing before the weight and ascites had reached their maximum points, and before the onset of diuresis, which was sudden. Maximum weight and greatest ascites coincided.

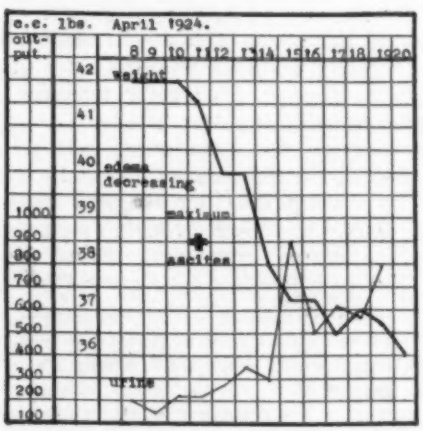

Chart 3 (Case 2).—Course from April 8 to April 20.

SUMMARY OF FEATURES RECORDED

1. Decrease in subcutaneous edema preceded diuresis, the maximum development of serous effusions, and the attainment of the greatest body weight.

2. Maximum weight and greatest ascites closely coincided.

3. In three instances diuresis was an extremely rapid process, after which the urine was normal. In the one instance in which the elimination of fluid took as long

4. Aldrich and McClure (footnote 1). McClure, W. B., and Aldrich, C. A.: Time Required for Disappearance of Intradermally Injected Salt Solution, J. A. M. A. 81: 293-294 (July 28) 1924.

as its accumulation, complete return to normal water balance did not occur (Chart 4).

4. Each attack followed or occurred coincidentally with an infectious process.

5. The attacks averaged about three weeks in duration. Increase of body weight took much longer than its decrease.

A few other facts noted during these attacks should receive attention before a possible explanation of this behavior is discussed.

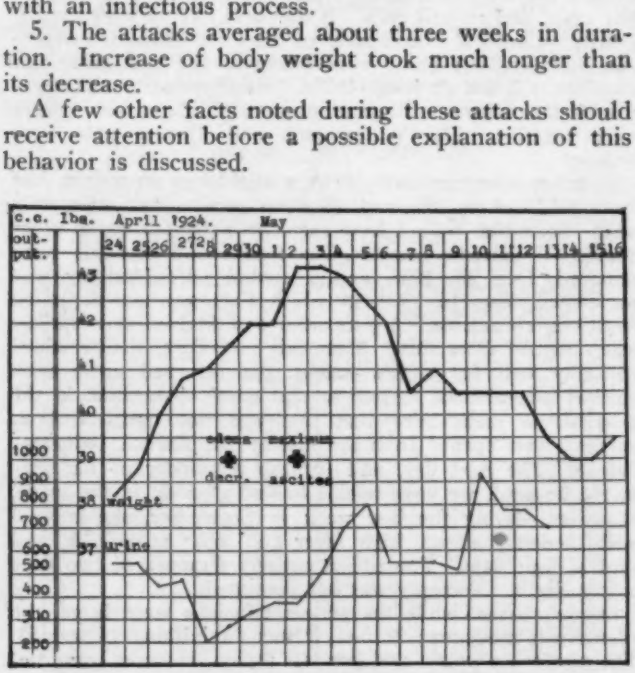

Chart 4 (Case 2).—Course of attack.

(*a*) When a needle punctured the skin during the early increase of edema, no fluid escaped from the wound unless blood was drawn; i. e., the edema was nonpuncturable. Later, after the development of serous effusions, a clear or pink fluid escaped; i. e., the edema was puncturable. This was best demonstrated on the legs, as it was here only that marked edema was present after the formation of serous effusions.

(*b*) It was very difficult to make the patients perspire during the early increase of edema.

(*c*) During increasing edema, the urine was scanty, acid, and contained albumin, whereas after diuresis had set in, it was alkaline, frequently albumin free, and often microscopically negative after a few days.

(*d*) In applying the intradermal salt solution test to these patients, the elevation produced by the injected salt solution during the increase and most marked period of edema became impalpable much sooner than it does in the normal skin; and during the decrease of edema, the disappearance time grew longer. In one or two instances, before edema was clinically evident, the absorption was more rapid than normal, and conversely, before weight began to drop, the absorption time grew longer.

COMMENT

The similarity of the sequence of events in all six instances is so marked that a clinical course of edema as seen in these cases can be outlined. Some of its features are so significant that they require discussion, as they add evidence as to the cause and nature of the process. In brief, generalized edema appeared insidiously, associated with an infectious process, and progressed over a period of many days, during which the body weight increased and the urinary output was scanty. This fluid did not seem free to escape through a needle puncture wound. A point was reached, at about the middle of the attack, at which the subcutaneous edema of the upper part of the body began to subside, and serous effusions became more marked. During this period, the weight did not drop, and the urinary output remained low, and edema of the lower extremities was puncturable. A few days later, the urinary output increased, sometimes quite suddenly, the body weight dropped, and the edema and serous effusions disappeared, this process usually taking much less time than that required for the increase of the weight.

In these cases, it can definitely be stated that decrease in subcutaneous edema was not due to increased urinary output. While I do not consider the facts here reported sufficient from which to draw conclusions as to the relation of urinary output to beginning edema, in the two cases observed from the onset, there was no marked reduction in urinary output preceding the edema. It is felt that these facts suggest that factors other than renal insufficiency control the process in cases of this type, and that the cause of edema here is extrarenal. Of such possible causes, the theories that increased capillary permeability and that increased colloid imbibition cause edema are, perhaps, most discussed at this time. Increased capillary permeability would explain many of the findings; but if water leaks into the tissues from this source, I cannot understand why salt solution intradermally injected should be more rapidly absorbed from the skin of an edematous part than from that of a normal one. The colloid imbibition theory of Fischer's, however, seems to explain this observation and to furnish a simple explanation of all the features observed so far in this work on the clinical course of edema. Using as a basis the course of edema as seen in these attacks, and bearing in mind the hypothesis that McClure and I

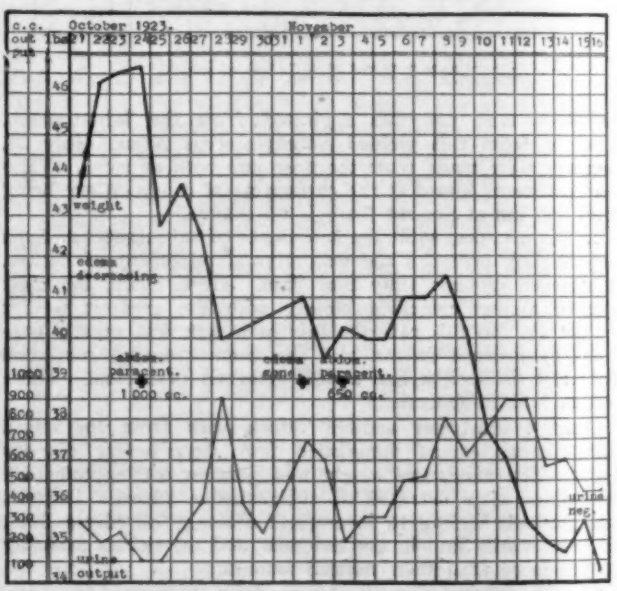

Chart 5 (Case 3).—Course from October 21 to November 16, 1923.

presented, it requires little imagination to construct the following hypothetical pathogenesis of these attacks:

A toxic substance elaborated as the result of infection is carried throughout the body, and so affects the tissue cells that their affinity for water is increased. In the resultant swelling, the edema fluid is held in the cellular structure, and the edema is nonpuncturable. As, presumably, the kidneys also are swollen, decrease in urinary output and pathologic urinary findings accompany the process. Later, as the infection sub-

sides and the intoxication diminishes, decreasing the power of the cells to hold water, the surplus is freed, and goes into the interspaces, leading to puncturable edema. M. H. Fischer,[2] in his chapter on syneresis, deals more fully with this subject. As long as the kidneys are swollen, this free fluid cannot at once be eliminated, and it finds temporary storage in the serous cavities, accounting for the fact that serous effusions increase with reduction of subcutaneous edema. As soon as the renal edema is reduced by the same process going on elsewhere, the kidneys function better, diuresis sets in, and the edema fluid is discharged. It is seen that this also explains the difficulty in making patients perspire during increasing edema, our results with the intradermal salt solution test, and the finding of occasional cases in which edema precedes the albuminuria.

To the foregoing possible explanation of this type of generalized edema it is interesting to apply the conception that edema has a protective or curative function. It is readily seen that, by diluting the toxins present in each cell, edema might prevent serious toxic injury. In fact, in this event, a self-limiting mechanism would be initiated, because, if sufficient water were available, the dilution would keep pace with the intoxication. Since most pyogenic infections tend to improve in a relatively short time, edema might be looked on as a temporizing mechanism, rendering toxins less potent until the infection is overcome.

This hypothesis seems more plausible when it is realized that the degree of dilution taking place is sufficient to be of therapeutic value. It sometimes happens, as in one of these instances, that edema fluid equals one half the body weight; and since not all the structures making up the weight are involved in this process, the dilution taking place in edematous parts might approximate 100 per cent.

If the foregoing ideas are true, certainly the usual efforts to reduce edema are unnecessary, and possibly harmful in these cases. Edema itself is not harmful unless it involves the brain, lungs or glottis. Unless these complications are present, and they are rare in nephrosis, it does not seem necessary to reduce edema. Extreme degrees of serous effusion may require paracentesis, because of pain or dyspnea. Lately, however, I have seldom resorted to this, because I have come to look on marked increase in serous effusions as an indication that diuresis may be imminent, and have accordingly delayed, where formerly I would have considered paracentesis inevitable.

Clinically, uremia has been noted to appear during the disappearance of edema. Vollhard mentions this,[5] and quotes von Leube as warning against the possibility. He seemed to think, however, that a shifting of the edema from the subcutaneous tissues to the brain caused the uremia. In a review of my recent cases of generalized edema without cardiac disease, three instances were found in which it seems that vigorous dehydrating measures combined with fluid restriction were harmful:

CASE A.—B. Z., a girl, aged 2 years, who weighed 34 pounds (15.4 kg.) on admission, had a marked generalized edema, which had followed an acute throat infection that was clearing up. She had little fever. The edema was attacked vigorously with the usual dehydrating measures, and fluids were restricted. Treatment was so successful that in seven days she lost 8 pounds (3.6 kg.), one third of her normal weight. However, we were disturbed at this time by the fact that her skin absorption time had not increased during the reduction of edema. Whereas in other patients at a corresponding time it had required about sixty minutes for the injected salt solution to disappear, from her skin it was gone in less than two minutes. While we were debating the meaning of this finding, she had a chill. This was followed by high fever. Eclamptic convulsion and death ensued while efforts were being made to introduce fluids intravenously.

CASE B.—P. F., a boy, aged 10 years, had a severe tonsillitis, following which (seven days), urinalysis was normal. Three days later, an attack of giant hives came on, which was followed by drowsiness and vomiting. It was noted that he urinated infrequently. The following day the face was puffy, he developed headache, and the urine contained large amounts of albumin and casts. Fluids were restricted to the amount voided, and cathartics and alkalis were given. After a slight improvement in symptoms, his blood pressure began to rise and he became restless. This increased during the night, and in the morning, six days after the hives, he could not see. Convulsions followed quickly, and he became comatose. His blood pressure was 145; his temperature, 102; the blood nitrogen elements were markedly increased, and he was having convulsions every few minutes. That day he was given, in two doses, 1 quart (liter) of 5 per cent. dextrose-Ringer's solution intravenously. During the night he came out of coma, so that large amounts of fluid could be given by mouth. Although frequent convulsions continued, he regained his sight and answered questions intelligently. While continuing to force fluids, dehydrating measures also were used. Although the edema increased for a time, he grew less toxic. After eleven days, the convulsions ceased, and he made a complete recovery. I feel that if fluids were indicated during the uremic attack, they were also indicated before it came on, and that possibly their early administration might have averted the attack.

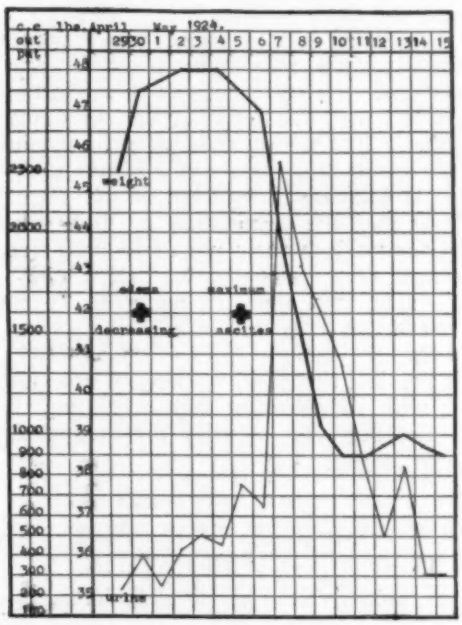

Chart 6 (Case 3).—Course from April 29 to May 15, 1924.

CASE C.—M. T., a student nurse, was taken ill with headache, nausea, somnolence, oliguria and moderate edema. The blood pressure was high, and the urine contained albumin, casts and red cells. Fluids were restricted and dehydrating measures pushed during the first few days. The edema did not increase during this time, but the blood pressure and headache did. It was at this time that Dr. Brennemann made the remark previously quoted. It was decided to force liquids by mouth and by rectum. The day after this was done, she felt improved, and was soon comfortable, though the edema persisted several days. She had no marked uremic symptoms except while fluids were being restricted.

5. Vollhard, F., in Mohr and Staehlin's Handbuch für inneren Medizin.

Consideration of these facts has made me extremely careful in using dehydrating measures. It seems rational that, when used, we should see to it that the body has a chance to replace the water lost, especially if toxic symptoms are present. It seems, moreover, that vigorous treatment of edema may misplace our energy, as the only real cure possible in these cases is to eliminate the causal intoxication. In my cases, wherever it has been possible suddenly to relieve this intoxication, as by draining an abscess, the attack of edema has been cut short. Whenever this has not been possible, the attack has been little influenced by treatment aimed at the edema alone.

SUMMARY

1. In six attacks of generalized edema in three cases of nephrosis, diuresis began after reduction of subcutaneous edema had become plainly evident, and serous effusions reached their maximum points during the period between the beginning disappearance of edema and the onset of diuresis. Reduction of body weight to normal was a more rapid process than its increase to the maximum point in the attack. Infectious processes were present in all instances.

2. It is felt that this behavior can be explained on the hypothesis that toxins elaborated in the infectious process so affect the tissue colloids that their affinity for water is increased, resulting in the formation of edema; and that the elimination of fluid takes place when the tissues lose their power to hold this excess water because of a lessened intoxication.

3. It is suggested that, in nephrosis, edema may have a protective function in diluting toxins in the tissues.[6]

4. It is possible that fluid restriction, especially when combined with dehydrating measures, may interfere with this function and intensify the intoxication.

545 Lincoln Avenue.

MOST FAVORABLE TIME FOR TRANSUTERINE INSUFFLATION TO TEST TUBAL PATENCY

ADVANTAGES OF SELECTING THE POSTMENSTRUAL PHASE

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NEW YORK

Since the method of transuterine insufflation to determine tubal patency or occlusion was devised (November, 1919), I have regarded the postmenstrual phase as the most suitable time in which to apply the test. From an analysis of 1,000 consecutive insufflations, it has become clear that the week following a regular period should practically always be preferred and for the following reasons:

ACTIVITY OF UTERINE MUCOSA

The uterine mucosa is practically never completely at rest at any phase of the menstrual cycle. Immediately after cessation of the menstrual flow there is already evidence of epithelial proliferation, and the process of regeneration may be said to be superimposed on that of desquamation. But the mucosa is at its thinnest during the first few days following the menses, and therefore offers the least obstruction to the introduction of the uterine cannula. Every day thereafter the superficial portion of the endometrium takes on an increasing thickness, so that on the fifth day it is three times as thick as the basal layer, and on the eighth day four to five times as thick (Robert Schroder). In the premenstrual or pregravid phase, swelling of the endometrium is considerable and may partly close the uterine ostia of the tubes. Manometric evidence furnishes added evidence of this, since there were higher initial pressure rises of the mercury column in my earlier experiences when patients were examined without any definite choice of time. The nearer one approaches the next menses in testing for tubal patency, the greater the pressure required to overcome the physiologic resistance of the uterus and tubes. It was found occasionally, for example, that in the same patient an insufflation just before the period would be attended by a rise of 180 or 200 mm. of mercury, while soon after the period the pressure would not exceed from 80 to 100 mm. When one recalls the histologic picture of the premenstrual endometrium or when one views a uterus extirpated just before the next regular menses, the mechanical conditions to account for the increased pressure become apparent.

ABSENCE OF SECRETION IN POSTMENSTRUAL INTERVAL

The endometrial glands are proliferating in the postmenstrual interval but they are not yet producing secretion, a process which begins in the midintermenstrual period, and is most conspicuous just before the menses. When the test is performed four or five days after cessation of the menses, the uterine cannula takes up practically no mucous secretion in its small openings at the tip, thus allowing freer passage of the gas and yielding truer intra-uterine and intratubal pressure rates. It was learned in the early tests that in some cases the cannula became plugged on being introduced into the uterus, and that a certain pressure was required to overcome the obstruction within the uterine cannula itself. This occurred in instances in which the cervical secretion was practically absent or very scant. Mucus from this source is always to be considered, and one of the contraindications to the performance of the test is thick mucopus from an endocervicitis. When there is a small amount of mucus, it may be removed by suction before the uterine cannula is introduced. The cannula fenestra may also become obturated by the swollen and succulent premenstrual mucosa.

ELIMINATION OF POSSIBLE DISPLACEMENT OF UNIMPREGNATED OVUM

By choosing the postmenstrual phase, one eliminates the theoretical possibility of displacing an unimpregnated ovum, which may have been discharged into the fallopian tube. It has been pretty firmly established that ovulation takes place, at the earliest, ten days following the cessation of a four day menstrual flow of the twenty-eight day cycle. For the same reason a fecundated ovum is less likely to be dislocated. Whether or not ectopic pregnancy may have resulted from haphazard insufflation as regards that particular menstrual phase is a matter of speculation and has not yet been reported.

An interesting case in this connection was called to my attention by Dr. Royal C. Van Etten, to whom I am indebted for the clinical history:

The patient, aged 31, had one living child, aged 7 years, the only pregnancy in nine years of married life. Her periods

6. Since presenting this paper, I find that Plass and Bogert suggest that the edema associated with toxemia of pregnancy may be a protective mechanism (Plass, E. D., and Bogert, L. J.: Plasma Protein Variations in Normal and Toxemic Pregnancies, Bull. Johns Hopkins Hosp. 35: 361 [Nov.] 1924).

were perfectly regular, though they had been somewhat scanty of late. The physical examination showed a slightly relaxed outlet and a healed stellate laceration of the cervix. The right ovary was found prolapsed. The tubes were normal. She had a normal period, July 18 to 21. The period previous to this was June 25 to 28. Uterine insufflation was done by Dr. Van Etten, July 26, 1923. The initial pressure rise was 120 mm. of mercury. Insufflation was followed by some pain in the shoulders. July 31, the patient reported that she had pain in the shoulders one day after the insufflation, and a slight show. She drove her car to the country, a distance of about 40 miles, and felt very well. Coitus took place two days after insufflation. August 6, or eleven days after the insufflation, the patient had an acute, tearing pain in the pelvis, and was taken to a hospital in the country. There were symptoms of a ruptured ectopic pregnancy. She had no fever. The patient was observed until August 28, when an examination revealed a mass on the right side in the culdesac. She had just passed through a menstrual period. The blood examination showed white blood cells 8,700, and polymorphonuclears, 70 per cent. The patient was kept in bed until September 12. She was brought to New York, September 23. A mass to the right side of the uterus was found by Dr. William E. Studdiford and Dr. R. C. Van Etten. The diagnosis was probable hemorrhage into an ovarian cyst on the right side. An operation was recommended, but was delayed until Feb. 13, 1924. There were normal menstrual periods between these dates. At the operation, an ectopic gestation sac the size of a marble containing an embryo 1.5 cm. in length was found resting in the angle of the right tube and was picked off without causing any bleeding. One suture was taken in the tube, and everything else was normal. The patient made an uneventful recovery.

This case is susceptible of two interpretations, and these depend on whether we may regard this patient as being pregnant or not at the time of insufflation. Two facts in this history may point to a possible preexisting ectopic pregnancy at the time of the insufflation. One is the anticipated and scanty last period, which came about one week ahead of the regular time, and the other is the age of the ectopic pregnancy as found at the operation. On the other hand, the sequence of events points to a one child sterility most probably due to some obstruction in the tubes, as evidenced by the initial pressure of 120 mm. of mercury. This having been overcome by the insufflation, the patient became pregnant at the most favorable time for fruitful coitus, which took place seven days after cessation of the menstrual period. The symptoms of an ectopic pregnancy developed eleven days following the insufflation. These symptoms may well have been due to a ruptured corpus luteum cyst or hemorrhage into the latter, and the growth of the fetus proceeded still further to at least a month's development. That the ectopic pregnancy was not present at the time of the insufflation is deducible from the fact that the symptoms set in eleven days after the uterine insufflation and not immediately, for the mechanical distention produced within the tube by the gas is but momentary, and carbon dioxid is absorbed in a few minutes. In any event, observation of this case teaches the advisability not only of performing the test immediately after a menstrual period but also of paying due regard to the last preceding period, which must have been regular in every respect.

DANGER, OTHERWISE, OF INSUFFLATION IN EARLY PREGNANCY

In certain cases of functional amenorrhea, unless this rule is observed, i. e., choosing the postmenstrual phase, uterine insufflation may be done in the presence of an early and unrecognized pregnancy. No injury to the pregnancy need occur because, in spite of the insufflation, the gestation may advance normally. I have personal knowledge of two cases of early pregnancy in which insufflation was done experimentally with the consent and knowledge of the patient and family physician. In the first patient the gestation was of about six weeks' duration, and the gas passed through the fallopian tubes, establishing a subphrenic pneumoperitoneum. In the other, a third month gestation, the gas failed to produce a subphrenic pneumoperitoneum. Both of these patients went to full term, and a normal baby and placenta were delivered. Peterson and Cron [1] have reported two similar observations.

In a third case, uterine insufflation was done without the knowledge of an early pregnancy being present. The patient was a stout woman, who had periods of amenorrhea of from six to eight weeks. She had been pregnant twice before. Shortly after marriage she had an abortion induced at two months, and a year later she had a spontaneous miscarriage at six weeks. She became relatively sterile; the uterus was found to be in good position, about normal in size, and the vagina was found to be definitely stenosed. The patient presented generalized hirsuties. She had just passed through an eight weeks amenorrhea at her last period. Uterine insufflation was done about four weeks from this period and again three weeks later. In the first test there was considerable mucus in the cannula, and the mercury pressure was high. In the second test mucus was absent, and the pressure rose to 110 mm. of mercury, establishing a subphrenic pneumoperitoneum.

Thirteen weeks after the second insufflation, this patient miscarried, the fetus measuring 21 cm. and weighing 250 gm.; in other words, it was a fetus of the fifth month of gestation. It was well formed, and breathed for five minutes. The immediate provocative cause, according to Dr. Meyer Rosensohn, who attended her at the Lying-In Hospital and through whom I am able to give the details of the case, was a prolonged automobile journey which the patient took the day preceding the miscarriage. Whether or not the insufflation in this case was a remote factor in the miscarriage remains problematic for the present. However, the history of two previous miscarriages antedating the insufflations in this patient and the secondary sexual characteristics denoting endocrine deficiency would appear to have played an important rôle in her predisposition to miscarry. In any event, this case illustrates the importance of choosing the week after a regular menstrual period for uterine insufflation.

MINIMAL RISK OF CARRYING INFECTION

By insufflation of the uterus in the postmenstrual interval, the theoretical risk of carrying infection is further reduced to a negligible minimum. It may here be noted that gas or air introduced through the uterus rises immediately to the subphrenic space as soon as the patient assumes the erect posture. If the gas bubbles were to carry infective material, this would be deposited at the point at which the bubbles break or become absorbed. As practically all of the gas escaping through the fimbriated opening of the tubes reaches the diaphragm, possible untoward sequelae in the pelvis, such as irritation or adhesions, are eliminated. This safety is not secured when fluid mediums are used to test the patency of the tubes, as infective material can be carried in solution or suspension and is perforce deposited in the pelvis, in cases of patency of the

1. Peterson, Reuben; and Cron, R. S.: Therapeutic Value of Transuterine Gas Inflation, J. A. M. A. **81**: 980 (Sept. 22) 1923.

oviducts, where it may produce irritation and other untoward sequelae.[2]

SAFETY FROM ENDOMETRIAL DISLOCATION

Endometrial dislocation in the sense of Sampson's theory of the cause of ovarian cysts of the endometrial type does not occur consequent to uterine gas insufflation. This may occur, theoretically speaking, as a result of curettage with irrigation, particularly in a dilated, postabortive uterus. When the nongravid uterus is irrigated after curettage without care being taken to permit the immediate return flow of the fluid, the latter may be forced through the open fimbriated ends of the tubes, and endometrial particles may be thus transported into the pelvic cavity. That irrigating fluid actually enters the pelvis when no immediate provision for its escape out of the uterine cavity through the cervical canal is made (by frequently withdrawing the irrigator or using a two-way flow channel) has been observed on many occasions. I have seen a pelvis literally inundated during irrigation by an inexperienced operator in doing a curettage preliminary to a ventrosuspension. It is this and similar experiences that have led me for many years to avoid irrigations as a routine in nonpregnant uteri.

But gas insufflated into the uterus during the postmenstrual interval will not displace endometrial particles through the narrow uterine openings of the fallopian tubes, as no gross trauma attends the gentle introduction of the uterine cannula; and the far gentler flow due to bubbling of the carbon dioxid gas occasions no disturbance of the uterine mucosa. Such endometrial dislocation, however, is conceivable as taking place when the uterus is insufflated during menstruation, as the mucosa is then cast off in microscopic or small macroscopic particles. These particles of endometrium, if not too degenerated, might, after being blown through the tubes, take root in the pelvis and give rise to transplants in the ovary and on the peritoneal surface of the other pelvic viscera. If it could be established that the desiccated mucosa of menstruation possesses the vitality of normal endometrium, the mechanical conditions for its further propagation in dislocated sections are not far to seek. This remains, however, a matter of speculation.

But not alone in respect to the possibility that it may displace particles of endometrium is uterine insufflation contraindicated during the menstrual flow. Sampson found, when he injected bismuth into a uterus removed during menstruation, that "the spongy layer of uterine mucosa from the very nature of its structure would act as a valve (probably at times imperfect), preventing any back flow into the receiving sinuses beneath it." This would, of course, apply to any substance that might be used, whether opaque and heavy, like bismuth, barium and collargol, or to the transparent and light gases, including air. The latter may just as readily be forced into the receiving venous sinuses when the intrauterine pressure is extreme. While no accidents have so far attended the insufflation conducted during menstruation by some workers abroad, who have applied this patency test perhaps in a spirit of scientific curiosity, I have felt from the very outset that it is not safe or desirable to employ the test during the menses or during bleeding from any other cause. There certainly can be no vital reason for ever choosing this time, when, in the interval stage of the menstrual cycle, as Sampson[3] has shown with his bismuth injections and as I have many times demonstrated to my own satisfaction with gas injections, "the endometrium, though thin, nevertheless offers complete protection against the escape of foreign material from the uterine cavity into the uterine veins."

In studying the question of the possibility of gas embolism, I found that when the extirpated uterus was severely traumatized during its removal, it would permit the escape of gas out of the uterine cavity through the uterine and ovarian veins. Particularly was this noted when the pressure was high, as when no egress through open fallopian tubes or back flow along the cervical canal was possible. If one is careful in doing a hysterectomy to avoid traumatizing the uterus, sparing the endometrium and leaving it intact, he will note that gas injected into its cavity will not pass through the endometrial vessels and out through the uterine veins.

That embolism must be an exceedingly remote complication of uterine insufflation is evident from Peterson's service at Ann Arbor and from Ward's service at the Woman's Hospital in New York, from which the largest series of cases besides my own have so far been reported without any such occurrence. In the answers to a questionnaire received from workers embracing several thousand cases, this complication has not been noted. If the indications and contraindications for uterine insufflation are strictly observed and the rules regarding pressure-rate-flow are adhered to, embolism as a possibility in this work can be absolutely excluded.

OVERCOMING OBSTRUCTION

In testing the patency of the fallopian tubes, it may not infrequently happen that some obstruction is at the same time overcome. If this occurs before the ovum of any given menstrual cycle is discharged into the oviducts, and coitus takes place soon after insufflation, the therapeutic possibilities of the method are enhanced. In my cases, success has been most striking when the factor of time relationship between ovulation and menstruation, on the one hand, and uterine insufflation, on the other, was taken into account.

SUMMARY AND CONCLUSIONS

The postmenstrual phase is the most favorable time in which to insufflate the uterus for the purpose of testing tubal patency. From the fourth to the seventh day following the cessation of the last regular period is the interval of choice. The endometrium is then in the relatively quiet stage and is least liable to infection, though the latter is extremely remote in careful hands. In order to avoid interfering with an existing or extrauterine pregnancy, it is best always to choose the postmenstrual interval for uterine insufflation. This rule is of especial value in cases of amenorrhea of shorter or longer duration in which it is otherwise impossible, if the patient presents herself several weeks after the last menstruation, to determine the length of gestation. As ovulation occurs not sooner than from twelve to fourteen days from the onset of the last preceding menstruation, pregnancy cannot take place before this time, and insufflation is theoretically and practically safest when done within a week after cessation of a regular menstruation. The theoretical possibility of endometrial dislocation, as well as of embolism formation, is also thus eliminated. Clinical and experimental

2. Rubin, I. C.: The Nonoperative Determination of Patency of Fallopian Tubes, J. A. M. A. 75: 661-666 (Sept. 4) 1920; Symptoms in Gynecology, Etiology and Interpretation, New York, D. Appleton & Co., 1923.

3. Sampson, J. A.: The Escape of Foreign Material from the Uterine Cavity into the Uterine Veins, Am. J. Obst. 78: 161 (Aug.) 1918.

observations have pointed to the advisability in any event of not exceeding a pressure of from 200 to 250 mm. of mercury. Higher pressures have been employed by experienced hands in the attempt to open tubes that have been previously demonstrated to be stenosed or closed. It will not do for the beginner in this work, and it goes without saying that such attempts are best undertaken under the most favorable auspices. Finally, by selecting the fourth to the seventh day, the therapeutic possibilities of the test become increased while more uniform results as regards the pressure-rate-flow, on the one side, and tubal patency, stenosis or occlusion, on the other, will be obtained.

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CAN HYPERSENSITIVENESS BE ACQUIRED?*

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During the last five years at the Massachusetts General Hospital, a large group of hypersensitive persons has been studied. The case histories of a number of these persons are so suggestive of the possibility that the hypersensitiveness may have been acquired that it has seemed worth while to review some of them because of the bearing which such a possibility would have on the study of the nature and mechanism of hypersensitiveness in general.

Some of these case histories are particularly striking.

REPORT OF CASES

CASE 1.—F. O., a chemist, aged 31, has been employed in the dye laboratory of a woolen mill, where he has worked for three years. For the last year he has had sneezing and asthma whenever he goes into this laboratory, but if he stays away he never has trouble. In his work, he handles a great variety of dyes in powder form. When tested with a number of these powders, he was found to be hypersensitive to a certain azofuchsin. This material gave a positive reaction which appeared in fifteen minutes, not only when the dry powder was added to a drop of alkaline salt solution on a scratch, but when a solution of the dye was injected intradermally.

At different times, fifteen other dyes have been tried on his arm, but always with negative results. The common foods produce no reaction. Azofuchsin on the arm of normal persons produces no reaction.

CASE 2.—E. Z., a man, aged 30, has worked in a grain store where, during the last four years, his work has brought him more and more in contact with hops and malt. Six months before coming to the hospital, he noticed an almost continuous cold in the head, which often developed into real asthma. This was worse during the winter months. Skin tests by the scratch method showed very definite reactions to pea and bean. He was asked to bring in samples of the hops and malt, and to extracts of these samples he gave very definite reactions. He was advised to keep away from the hop and malt grains, and at the same time was given treatment with malt extract subcutaneously, as a result of which he is now almost entirely relieved of his trouble, although the skin tests are still positive to malt, wheat and hops.

CASE 3.—I. S. B., a leather worker, aged 52, began to have asthma at the age of 30. At 36, he developed arthritis and stayed out of work for seven years, during which period he was entirely free of asthma. As soon as he went back, however, the asthma recurred again quite as before. An extract of the leather dust that he brought to the clinic gave an intradermal reaction that was quite definite and was not given by normal persons. Small doses of the same extract given subcutaneously produced a definite increase in asthma during the next three nights.

CASE 4.—J. B., whose case has already been described,[1] was a laboratory assistant, aged 22, who, after four years' work in the animal room, developed asthma and coryza, which was proved to be caused by his hypersensitiveness to rabbits and guinea-pigs.

CASE 5.—J. G., a baker all his life, quite suddenly developed asthma a year ago, at the age of 34. Several times during this year he has quit work for variable periods, during which he is always free of trouble, but has noticed that the asthma recurs whenever he returns. Skin tests showed well marked reactions to wheat, and also to pea.

CASES IN THE LITERATURE

This series might well be extended, and the literature contains many analogous cases.

Cadham[2] recently described three cases of hypersensitiveness to the wheat rust which is common at certain seasons in western Canada. Cooke's[3] cases of drug idiosyncrasy are evidently of acquired origin, and the medical student who became hypersensitive to urease after three months' exposure was described by Larsen and Bell.[4]

In all these cases, the association of occupation and environment with the symptoms not only explains the symptoms as due to external influences, but would seem to be such as to indicate a true cause as well as a real effect. Would it be reasonable, granting that hypersensitiveness to azofuchsin is rare, to conceive that my first patient had a so-called natural sensitiveness to this unusual substance, and then that this particular man should have had the misfortune to become an industrial chemist? Is it not therefore not only possible, but highly probable, that his hypersensitiveness was truly acquired?

To this question an affirmative answer seems inevitable, but to apply similar reasoning to all cases is by no means simple.

Let us examine certain groups of cases to study the relation between the environment and the causative factor.

ORRIS CORYZA

Orris powder causes a vasomotor rhinitis in women. The confirmation of this diagnosis is difficult, because whereas, during a certain period, 428 cases of vasomotor rhinitis were examined, and whereas forty-four of these patients gave a definitely positive skin reaction to an extract of orris root, in only twenty-one cases has it been so far possible to prove, by relief from symptoms when face powder was eliminated, that this orris root was the cause of the trouble.

If these twenty-one cases are analyzed as to etiology, we find that every patient was a woman between the age of 18 and 32, and that the duration of symptoms was less than three years except in four cases. The use of face powder antedated the onset of symptoms in all cases in which inquiry was made. Most of the women had used face powder for several years, but could not recall just how many. However, in several the information was definite. One woman, aged 32, had used face powder for ten years, and had symptoms of nasal obstruction, sneezing and watery discharge for six years; a woman, aged 21, had used powder for seven years and had symptoms for half a year; a

* From the Outpatient Department, Massachusetts General Hospital.

1. Rackemann, F. M.: Asthma, M. Clin. N. Am. **7**: 765 (Nov.) 1923.
2. Cadham, F. T.: Asthma Due to Grain Rusts, J. A. M. A. **83**: 27 (July 5) 1924.
3. Cooke, R. A.: Allergy in Drug Idiosyncrasy, J. A. M. A. **73**: 759 (Sept. 6) 1919.
4. Larsen, N. P., and Bell, S. D.: Classification and Management of Asthma in Childhood, Amer. J. Dis. Child. **24**: 441 (Nov.) 1922.

woman, aged 19, had used it for six years and had symptoms for two and a half years; another, aged 20, had used powder for three years with trouble during the past one year, and finally a girl, aged 18, had used powder for eighteen months and had coryza for six months.

Each of these patients has reported herself as cured when the use of face powder was stopped. These five examples are sufficient to show, first, that the symptoms did not develop when orris powder was first used; and secondly, that they did develop after a period of exposure which was in one case as short as six months, and in another case as long as seven years. On the other hand, one woman, aged 21, noted her first attack with her first orris powder shampoo; while another woman, aged 27, a professional hairdresser, dates her trouble from her start in business. These two cases are perhaps comparable with the children who, in some unexplained manner, are hypersensitive to egg white, and who have asthma or urticaria on receiving their very first taste of eggs. But it is hard to rule out the fact that a previous exposure to orris powder did take place in these two women; indeed, it is quite likely that they have used face powder, or that some one in the family has used it.

A history of asthma, hay-fever or idiosyncrasy in the family was obtained in only about half (46 per cent.) of these twenty-one typical cases.

Discussion of this, as well as of the fact that the sensitiveness is multiple even in the typical orris powder cases, will appear later.

HORSE ASTHMA

Horse asthma, like orris coryza, is a typical example of hypersensitiveness. While a positive skin reaction to horse dander occurring alone among many negative tests, or more frequently as one of several other positive tests, has been observed repeatedly in dozens of cases, a definite relationship between attacks of asthma and exposure to horse dander and, based on this, a diagnosis of horse asthma, have been confirmed in only thirty-six cases. Study of these thirty-six cases is more difficult than that of the orris powder cases, because persons sensitive to horses are usually sensitive to other animals or to other dusts, which are often of importance in producing symptoms. Furthermore, of these thirty-six cases, exactly half are in men, and the ages of all vary from 54 years to 10 years. The group is much less uniform.

Exact information as to the original exposure to horses is mostly lacking, but in every case there has been ample exposure to horse dander. For example, of the thirty-six patients, fourteen have lived all their early lives on a farm, most of them in northern New England. Five others were associated with horses in their occupations—a city fireman (who was quite relieved when motor apparatus was installed), a veterinary surgeon, a Jewish pedler of produce, and two hostlers. In each case, the exposure to horses antedated the onset of asthma. Four children of the group had been provided with ponies at an early age (although not certainly before the first symptoms of asthma).

A man, aged 29, had had no asthma since the age of 10, when a short attack was caused by the fumes from a sulphur match. During his youth he was away from home, not coming back until the age of 28 (one year ago). On his return he undertook the care of the barn, and for six months had no trouble, although he swept the barn floor once or twice each week. After this interval he began (to be sure it was in winter) to have asthma again, and came to know that his attacks were each precipitated by working in the barn.

This man evidently had an asthmatic tendency in his make-up, as evidenced by the early attack at the age of 10; but his sensitiveness to horses became evident only after an exposure to horse dust extending over a period of six months.

The family history in this horse asthma group was positive for possible hypersensitiveness in less than half the cases. Among the farmers it was positive in five, negative in six and unknown in three. Only one of the four children had a positive family history.

In addition to these more typical groups of orris and horse asthma, there are many other groups which would illustrate the probability that asthma may be acquired. Asthma due to wheat flour occurs among bakers. Indeed, the whole group of industrial asthma may well depend on the fact that certain individuals develop a hypersensitiveness to any one or more of a wide variety of substances.

The very fact that the symptoms are associated with the industry implies that the asthma was acquired.

COMMENT

Why do not many more individuals exposed to dusts such as orris powder and horse dander become sensitised? There must be in certain individuals, and luckily not many, a "tendency" to develop hypersensitiveness. The nature of this "tendency" is unknown. Cooke and Vander Veer [5] have shown that it may be inherited; but in the cases cited, the family history was positive in only 46 per cent. of the orris cases and in less than half of the horse cases, so that inheritance cannot be of first importance.

As to any physical characteristics, nothing uniform was noted in the orris patients. More were brunette than blonde; most of them were well nourished, but the series included both tall and thin girls and short and fat girls. Aside from their vasomotor rhinitis, all were well. The thirty-six patients with horse asthma included both men and women of every age from 10 to 50. Some of them were of tall stature and well nourished, while others were short, thin and sickly, differences explained by the duration and severity of their asthma, especially if complicated by a secondary infection; but nothing suggesting any endocrine dysfunction peculiar to the group could be observed.

At present, it is quite impossible to foretell which particular persons are likely to become hypersensitive in the presence of an adequate exposure. The reason why some do and some do not become hypersensitive is doubtless much the same as the reason why certain persons have more resistance to various infections than do others. As to the mechanism by which exposure to many different substances, most of them in the form of dust, can give rise to a definite hypersusceptibility, it is useless to speculate. Whatever this mechanism, it evidently develops slowly, since, in the cases cited, the duration of exposure before the appearance of symptoms varied from a few months up to ten years.

We know what extraordinarily small amounts of foreign serum suffice to sensitize a guinea-pig, and recently Hooker [6] has shown that a "noteworthy proportion of human subjects become hypersensitive to horse serum" several months after the injection of such small amounts as are used in toxin-antitoxin

5. Cooke, R. A., and Vander Veer, Albert, Jr.: Human Sensitization, J. Immunol. 1: 201 (June) 1916.

6. Hooker, S. B.: Human Hypersensitiveness Induced by Very Small Amounts of Horse Serum, J. Immunol. 9: 7 (Jan.) 1924.

(Schick) tests. It is easy to conceive how dust can be carried into the upper and lower respiratory tract. That guinea-pigs can be sensitized by injections of foreign serum given directly into the trachea has been shown by Jones[7]; but the absorption by the lower respiratory tract is very much slower than by all other routes, because when serum was given intratracheally to sensitized guinea-pigs, the symptoms of anaphylactic shock were much less marked than when other sensitized animals were reinjected into the peritoneal cavity.[7]

Although hypersensitiveness in man differs from anaphylaxis in animals in many ways, nevertheless we would expect that, in persons with a truly acquired sensitiveness, positive skin reactions would be given only to the one particular substance. In the cases described, however, skin tests were given to several other and different substances in fourteen of the twenty-one orris cases and in twenty-eight of the thirty-six horse cases. Mackenzie[8] has found, in retesting those patients treated several years previously with large amounts of serum, that nine out of sixteen patients gave one or more nonspecific reactions to serums other than the specific (horse) serum. Since tests to these other serums were not made before the original treatment, Mackenzie could not prove that this nonspecific hypersensitiveness had been acquired; nevertheless, his observations are comparable with those in the cases described above, and while they do not explain these other tests, they nevertheless lend credence to the fact that they exist in individuals who have been treated or exposed specifically.

CONCLUSION

The object of this communication is to call attention to the strong probability, based on circumstantial rather than on direct evidence, that hypersensitiveness can be acquired. (Actual proof could be attained by testing large numbers of persons as they first become exposed to some particular substance likely to cause trouble, and then, by retesting the same persons after an interval of many months, to show that a certain small proportion have acquired sensitiveness. Such a procedure would require a volume of routine and technical work which would make the study impracticable.)

It is hoped, however, that this paper will encourage further study of the mechanism by which such a hypersensitiveness becomes established. To identify this mechanism with that which accounts for the immediate symptoms exhibited by certain individuals, mostly infants and children, on what appears to be the original exposure to some particular foreign substance is another object of further study.

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7. Jones, F. S.: The Effects of the Intratracheal Administration of Foreign Serum, J. Exper. Med. **40**: 63 (July) 1924.
8. Mackenzie, G. M.: Human Sensitization After Large Amounts of Horse Serum, J. Immunol. **9**: 333 (July) 1924.

Training for Public Health Work.—It would be undesirable completely to regulate or standardize the courses of study for any of the degrees offered in a relatively young and rapidly growing profession like public health. It may be said, in general, however, that graduates from such a course of study should have a sound knowledge of the following five subjects: hygiene, sanitation, preventive medicine, statistics, and public health administration. The prescribed work should not absorb the entire time of the student. Probably 10 per cent. of his time should be left for elective work.—*Am. J. Pub. Health* **13**:837 (Oct.) 1923.

GENERALIZED EDEMA IMMEDIATELY FOLLOWING INSULIN CONTROL IN DIABETES MELLITUS*

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A pronounced generalized edema occurring in diabetic patients immediately following desugarization of the urine with insulin therapy was observed five times last year in this clinic. The edema promptly disappeared after treatment with potassium bicarbonate and potassium chlorid, 0.6 gm. each three times a day with meals.

Thus far we have found no case reports in this country of this annoying untoward effect of insulin control in diabetes. However, edema with insulin therapy has been noted in the German clinics. Hagedorn[1] explains an increase in weight of insulin patients with cessation of the diabetic symptoms as partly a water retention. Edema induced by insulin is reported by von Jaksch-Wartenhorst,[2] by von Noorden and Isaac,[3] and by Klein.[4] It may be mentioned that these writers employed insulin preparations made in Europe, which may have been more effective in inducing water retention through less complete removal of proteins or other substances.

The edema following desugarization with insulin may be considered as a combination of three factors:

1. A tendency to edema formation in diabetic patients because of dehydration of the tissues induced by the polyuria, which provokes a compensatory increased affinity of the tissues for water; as a result, sodium salts in amounts ineffective in sound individuals call forth edema in the diabetic patient (Boenheim[5]).
2. An effect of insulin preparations per se; this may be allergic in character, owing to noninsulin constituents, and not hormonal as suggested by Klein.[4]
3. An exclusion of the diuretic action of the excess of glucose in the blood when accurate insulin dosage is employed and prompt control is established.

The following history abstract is typical for our group of cases:

A man, aged 24, admitted to the hospital, April 28, 1924, weighed 100 pounds (45 kg.). The diabetes had been noted first in January, 1923, and had been controlled by dietary management. Following a cold, cough, and intermittent fever about March 1, 1924, the patient began to show sugar again. He had lost 22 pounds (10 kg.) since that time. Preliminary dietary regulation indicated that insulin was necessary, and he was desugarized, May 3, with 30 units of insulin a day and a diet of protein, 40 gm.; carbohydrate, 40 gm., and fat, 100 gm. The diet was increased as the glucose utilization improved. The blood sugar, May 4, was 0.138 per cent. Edema in the feet and shins was noted, May 4 and 5; this rapidly increased, extending to the face and scrotum and with ascites. May 8, his weight had increased to 121 pounds (55 kg.). He was given potassium chlorid, 10 grains

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1. Hagedorn, H. C.: Erfahrungen mit Insulin in der Diabetesbehandlung, Deutsch. med. Wchnschr. **49**: 1005 (Aug. 3) 1923.
2. Von Jaksch-Wartenhorst, R.: Insulin und Diabetes, Zentralbl. f. inn. Med. **45**: 2 (Jan. 12) 1924.
3. Von Noorden, C., and Isaac, S.: Allegemeine Erfahrungen über 50 mit insulin Behandelte Diabetesfalle, Klin. Wchnschr. **2**: 547 (Oct. 22) 1923.
4. Klein, O.: Zur hormonalen Beeinflussung des Wasserhaushaltes beim Diabetes mellitus durch Insulin und Pituitrin, Ztschr. f. klin. Med. **100**: 458 (July 25) 1924.
5. Boenheim, W.: Beitrag zur Kenntnis des diabetischen Oedems, Deutsch. Arch. f. klin. Med. **143**: 46 (Aug.) 1923.

(0.65 gm.), and potassium bicarbonate, 10 grains (0.65 gm.), with meals beginning May 8, and salt was removed from his tray. His body weight dropped to 106 pounds (48 kg.), May 13, and to 103½ pounds (47 kg.), May 16, with disappearance of demonstrable edema. He was discharged on a final diet of protein, 60 gm.; carbohydrate, 65 gm., and fat, 175 gm., totaling 2,140 calories, with 30 units of insulin daily.

Blood uric acid, May 9, was 3.3 mg. per cent.; blood urea was 9 mg. per cent. Blood pressure was: systolic, 90; diastolic, 40.

No recurrence of the edema has been reported by the patients when the potassium therapy was discontinued on discharge. None of the patients had significant renal or cardiac disturbances. The urines of all the patients were free from acetone and diacetic acid when the edema developed. That the edema may persist for thirty days if uncontrolled was shown for one of our cases; potassium therapy was then instituted, and the edema almost completely subsided in thirty-six hours.

The effect of potassium (or calcium) salts in promoting the disappearance of edema is significant and rational, if such action is associated with the mobilization of the cation sodium. Years ago, von Bunge [6] showed that the administration of potassium salts leads to an increased elimination of sodium in the urine. It is a common experience that sodium bicarbonate therapy may induce generalized edema in diabetic patients. Falta and Quittner [7] found that in diabetic patients,

Laboratory Data for Case Reported

	Diet				Urine							
Date	Protein	Carbohydrate	Fat	Calories	Volume, Gm.	Sp. Gr.	Acet.	Diac.	Sugar, per Cent.	Sugar, Gm.	Blood Sugar	Wt., Kg.
4/28*	100	100	8	905	2,200	1.033	+	tr.	5.55	122	0.800	42.7
4/29	100	100	8	905	3,500	1,028	+	tr.	4.54	159	.....	....
4/30	50	50	4	453	2,900	1.018	+	0	1.94	56	0.232	....
5/ 1	50	50	4	453	3,200	1.015	+	0	2.00	64	.....	45.4
5/ 2	50	50	4	453	3,500	1.015	tr.	0	1.85	65	0.227	....
5/ 3†	40	40	100	1,218	4,080	1.006	0	0	tr.	tr.	.....	....
5/ 4	40	40	100	1,218	3,400	1.010	0	0	0	0	.....	....
5/ 5	45	45	113	1,415	4,400	1.007	0	0	0	0	0.138	....
5/ 6	45	45	113	1,415	4,400	1.007	0	0	0	0	.....	....
5/ 7	50	50	125	1,572	3,100	1.012	0	0	0	0	0.149	....
5/ 8‡	50	50	125	1,572	6,000	1.008	0	0	0	0	.....	55.0
5/ 9	55	55	138	1,730	6,700	1.007	0	0	0	0	0.172	....
5/10	55	55	138	1,730	4,400	1.008	0	0	0	0	.....	....
5/11	60	60	150	1,887	4,750	1.007	0	0	0	0	.....	....
5/12	60	60	150	1,887	4,200	1.007	0	0	0	0	0.161	49.0
5/13	60	65	175	2,140	3,200	1.007	0	0	0	0	.....	48.2
5/14	60	65	175	2,140	3,750	1.008	0	0	0	0	0.174	47.3
5/19	60	65	175	2,140	4,750	1.007	0	0	0	0	0.151	47.8

* Part day only.
† Insulin, 10 units three times a day, from this day on.
‡ Potassium chlorid and potassium bicarbonate, 0.6 gm. each, three times a day until May 16.

with or without acidosis, the administration of sodium bicarbonate provoked edema with salt retention. The edema would disappear with theobromin sodiosalicylate along with increased salt excretion; similar results were noted for war edema. Falta [8] has reported a case of diabetes in which edema was induced by sodium bicarbonate when the diet was low in sodium chlorid; potassium bicarbonate was effective in causing the edema to subside. He concluded that the chief factor in diabetic edema was the cation sodium. Boenheim [5] was able to provoke and to mobilize edema in a diabetic patient by giving sodium bicarbonate and then substituting the potassium salt. Rockwood and Barrier [9] have reported favorable results with calcium lactate or chlorid in massive edema of diabetes as well as of nephritic origin; earlier papers by Blum and his associates,[10] by Schultz [11] and by Hülse [12] emphasize the powerful diuretic effect of potassium and calcium salts in the dropsy of chronic renal disease and in cases of ascites and essential edema. It is of interest that insulin edema is similarly and even more easily controlled by nonsodium salt therapy.

The laboratory data for the case reported are given in the accompanying table.

Three of our cases were handled differently as regards dietary management. They were placed on a bare maintenance diet with a fatty acid: glucose of 1.5 by weight on admission; the energy of these diets was increased a third with added fat when the patients were allowed up and about after becoming sugar free.

6. Von Bunge, G.: Textbook of Physiological and Pathological Chemistry, 2d English Ed., Philadelphia, 1902, p. 91.
7. Falta, W., and Quittner, M.: Ueber den Chemismus verschiedener Oedemformen, Wien. klin. Wchnschr. **30**: 1189 (Sept 20) 1917.
8. Falta, W.: Ueber das diabetische Oedem, Wien. Arch. f. inn. Med. **5**: 581 (Jan. 30) 1923.

THE FOUCHET TEST IN CHOLECYSTITIS *

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The test for hyperbilirubinemia as first set forth by Fouchet [1] has recently been applied clinically in the diagnosis of cholecystitis without jaundice by Friedman and Straus,[2] and later by Speik, Liljedahl and Falk.[3] Friedman and Straus obtained positive reactions in 83 per cent. of a series of twenty-nine cases of cholecystic disease, and felt that the test was useful in distinguishing between gastric and duodenal ulcer, or carcinoma of the stomach and cholecystitis. In a series of forty patients with cholecystitis and stones, Speik, Liljedahl and Falk obtained a positive reaction in 67 per cent.; however, 42 per cent. of them showed the presence of excess bilirubin macroscopically. These investigators also found that many other conditions besides cholecystitis gave a positive reaction, among them being duodenal ulcer; hence, the differential diagnostic value of the test in certain conditions is impaired.[2]

In our investigation, the technic as described by Fouchet was followed minutely. This is an oxidation test for bilirubin, and is held by its author to give a green color reaction when bilirubin is present in the blood serum in dilutions up to 1:60,000. Equal parts of serum and reagent are added. The reagent consists of trichloracetic acid, 5 gm.; [4] water, 20 c.c., and ferric

9. Rockwood, R., and Barrier, C. W.: Calcium Treatment for Edema, Arch. Int. Med. **33**: 643 (May 15) 1924. Keith, N. M.; Barrier, C. W., and Whelan, Mary: Treatment of Nephritis and Edema with Calcium, J. A. M. A. **83**: 666 (Aug. 30) 1924.
10. Blum, L.; Aubel, E., and Levy, R.: L'action diurétique des sels de calcium dans les épanchements ascitiques et dans les oedèmes dits essentials, Bull. et mém. Soc. méd. d. hôp. de Paris **45**: 1504 (Nov. 18) 1921. Blum, L.; Aubel, E., and Hausknecht, R.: L'action diurétique des sels de calcium dans la néphrite avec oedèmes, ibid. **46**: 206 (Feb. 3) 1922. Blum, L., and Schwab, H.: L'action du chlorure de calcium dans les hydropsies cardiaques: Les dangers de l'administration prolongée de fortes doses de ce sel, ibid. **46**: 214 (Feb. 3) 1922.
11. Schultz, E.: Klinische Beobachtungen über Nierentzündungen bei Kriegstheilnehmern, Ztschr. f. klin. Med. **86**: 111, 1924.
12. Hülse, W.: Ueber den Einfluss der Kalksaltzes auf Hydrops und Nephritis, Zentralbl. f. inn. Med. **41**: 441 (June 19) 1920.

* Work done in the Division of Medicine, Mayo Clinic.

1. Fouchet, A.: Méthode de nouvelle de recherche et de dosage des pigments biliaires dans le sérum sanguin, Compt. rend. Soc. de biol. **80**: 826-828, 1917; J. de pharm. et de chim. **17**: 44-47, 1918.
2. Friedman, J. C., and Straus, D. C.: Bilirubin Determination in Cholecystitis Without Jaundice, J. A. M. A. **82**: 1248-1251 (April 19) 1924.
3. Speik, F. A.; Liljedahl, E. N., and Falk, Marie A.: Observations on the Fouchet Test in Latent Jaundice, J. A. M. A. **82**: 2097-2098 (June 28) 1924.
4. Friedman and Straus used 5 c.c. of trichloracetic acid.

chlorid, 2 c.c. Four hundred and fifty-eight patients were examined. Eighty-six had some form of cholecystitis; the others were used as controls. Fifty-four positive reactions were obtained in the entire series. Of the eighty-six patients with disease of the gallbladder, seventy-one (82.6 per cent.) had a negative reaction to the test. Only fifteen (17.4 per cent.) had a positive reaction. To illustrate the variety of diseases other than cholecystitis in which a positive reaction may be obtained, the reactions have been tabulated.

The reactions were classified according to the intensity of the color change, Group 1 being so faint as to be questionable; Group 2, faint but definite; Group 3, clear cut and marked, and Group 4, very deep. Of the fifteen positive reactions, four were in Group 1, five in Group 2, four in Group 3 and two in Group 4. Every patient on whom a Group 3 and 4 reaction was observed had frank jaundice at the time of examination, thus obviating any necessity for examination of the blood serum.

Reactions from the Fouchet Test (Four Hundred and Fifty-Eight Cases)

Negative reactions		404
Cholecystitis	71	
Miscellaneous	333	
Positive reactions		54
Cholecystitis	15	
Splenomegaly	1	
Cancer of the pancreas	3	
Metastasis to liver	2	
Syphilis 3	4	
Tuberculosis of the bladder	1	
Cervical polyp	1	
Duodenal ulcer	5	
Indeterminate	2	
Chronic constipation	2	
Tonsillitis	2	
Catarrhal jaundice	1	
Primary cancer of bile ducts	1	
Hepatitis	1	
Biliary cirrhosis	2	
Hemolytic icterus	1	
Hyperacidity	2	
Pernicious anemia	6	
Functional disease of stomach	2	

It is of interest to note that in five cases of duodenal ulcer a positive reaction was obtained, confirming the findings of Speik, Liljedahl and Falk. It should also be noted that these five patintes were operated on, and the gallbladder pronounced normal on exploration.

Of the 404 cases in which the reaction was negative, seventy-one were cases of cholecystic disease, thirty-eight simple cholecystitis, and thirty-three cholecystitis with cholelithiasis. In many of these cases, diagnosis was verified at operation; others were checked by positive roentgen-ray findings, and still others by the clinical history alone.

None of the tests were made during an attack of gallbladder colic; some were done two or three days after; but in all the remaining cases, the gastric symptoms or pain in the gallbladder were still prominent. This places them in the "interval" class of Friedman and Straus.

CONCLUSIONS

The value of the Fouchet test as a diagnostic adjunct seems questionable in view of the following facts:

1. Of eighty-six cases of gallbladder disease, only fifteen (17 per cent.) gave a positive Fouchet reaction. Four of the fifteen gave a reaction too faint to be at all reliable; in six more of the same group the patients were frankly jaundiced, and so did not require a refined test to demonstrate the hyperbilirubinemia.

2. A large majority of cases of very definite and severe disease of the gallbladder gave a negative reaction.

ANTIPERISTALSIS IN DUODENUM: A PRESUMPTIVE SIGN OF INTESTINAL PARASITOSIS

PRELIMINARY REPORT

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The observations that are the occasion of this preliminary report are based on thirty-five cases recently observed by me. It is not contended that these findings will bear the test of time. The report is given here for the purpose of calling attention to an interesting phenomenon and of stimulating interest in this field of endeavor.

The literature is conspicuously silent on antiperistalsis in the second and third portions of the duodenum. It is, of course, a matter of common knowledge that the peristaltic wave reverses itself in obstruction in the vicinity of the duodenojejunal juncture, whether the obstruction is intrinsic or extrinsic to the intestine. Cole and Holzknecht, independently of each other, experimentally produced this phenomenon by mechanical obstruction, in 1910. Joseph and Metzler,[1] using rabbits as subjects, studied normal motility of the duodenum by means of small balloons anchored in the antrum and duodenum, but observed no antiperistalsis; Wheelon and Thomas[2] studied motility of the duodenum by means of graphic observation on twenty-three dogs, placing an enterograph in the duodenum and antrum. Antiperistalsis was not observed by them during this series. Alvarez,[3] in his observations on the duodenum, reached the same conclusions as Wheelon and Thomas without observing antiperistalsis. Thorning and Smith[4] of Houston, Texas, observed retrograde peristalsis in the second and third portions of a dilated duodenum, due to obstruction in the ileocecal region, and state that little reference is obtainable in the literature.

My attention has recently been directed to antiperistalsis at this location. In the first few instances, only a moderate amount of attention was paid to it, and no explanation was offered to the clinician beyond stating that it was commonly seen in obstruction. Observation of the condition on two brothers the same day, in whom obstruction obviously did not exist, gave impetus to my investigation. The patients just referred to showed positive stools for hookworms, and it occurred to me that this was a possible explanation. I at once determined on blood and stool examination in all cases manifesting this phenomenon, when I could secure the cooperation of the referring physician.

To this date, I have had occasion to observe thirty-five cases in which antiperistalsis was present, with positive laboratory reports for the ova of hookworms in thirty-three cases.

Retrograde peristalsis, when present, is commonly observed by me in young subjects from 20 to 35 years of age, who suffer from some indefinite gastrointestinal disturbance, and who appear generally below par. The oldest patient observed was 51; the youngest, 6 years. Three children, aged 6, 9 and 11, respectively, who were known to have intestinal para-

1. Joseph and Metzler: Am. J. Physiol. **27**: 31, 1910.
2. Wheelon, H., and Thomas, J. E.: Am. J. Physiol. **59**: 72-96 (Feb.) 1922.
3. Alvarez, W. C.: Am. J. Physiol. **64**: 371-386 (April) 1923.
4. Thorning and Smith: Tr. South. Surg. A. **30**: 176-185, 1917.

sites and were seen for purposes of observation only, are included in this series.

Patients coming to me for observation are given the usual barium meal. Since pressure of the filled stomach against the duodenojejunal juncture could produce this condition if the stomach were forced backward, the gloved hand is not used to manipulate the stomach, it being allowed to empty itself unaided. Should pylorospasm continue unduly long, the patient is allowed to sit in an anteroom for some time before continuing. For obvious reasons, any observation of this condition with the patient prone is disregarded; only those patients who have manifested this phenomenon in the standing position are included in this series.

The roentgen-ray examination shows that the food passes into the stomach with little or no cardiospasm. Hyperperistalsis accompanied by temporary pylorospasm is the rule. The duodenum manifests considerable spasm, the meal passing somewhat slowly to the duodenojejunal junction, where it pauses and passes backward to the bulb, after which it proceeds to oscillate between these two points. This rocking to and fro may occur from two to eight times.

Six hour examination usually shows the head of the meal at the splenic flexure or in the descending colon, with the tail in the jejunum or a small gastric residue.

Of the thirty-five patients manifesting retrograde peristalsis, thirty-three exhibited ova of the hookworm, of whom two showed the ova of *Ascaris lumbricoides* in addition. Thirty of the thirty-five cases showed eosinophilia. Of the series, two patients who showed marked eosinophilia gave negative stool examination. A possible explanation of these negative reports is that single stool examinations were made on the eighth and fifteenth cases of the series, which were the ones giving negative stools. After the twentieth case, the evidence became sufficient to induce me to insist on multiple stool examinations, should the first prove negative. This was necessary in three of the succeeding cases, which promptly showed the ova after a small dose of magnesia magma.

REPORT OF CASES

The following case reports are typical:

CASE 1.—Miss C. G., aged 17, whose family history was negative, and who had had the usual diseases of childhood, but no serious illness, presented herself complaining of inability to sleep; the loss of considerable weight; vomiting of food at irregular intervals, and a slight cough, accompanied by such a profound depression that it became necessary for her to leave school and return to her home. Physical examination by her physician, aside from a moderate anemia, was negative. The stool showed no ova of any kind. Gastro-intestinal study was done by me. No pathologic change was observed, with the single exception of antiperistalsis in the second and third portions of the duodenum. In spite of previous stool examination, parasitosis was suggested to the clinician. Magnesia magma was given; the laboratory reported a stool positive for hookworm. Two weeks after carbon tetrachlorid treatment, the patient reported a gain of 4 pounds (1.8 kg.), slept normally, showed no depression, and returned to her school apparently well. There was no opportunity to observe this patient roentgenologically following treatment.

CASE 2.—Miss R. L. W., aged 21, whose family history was of no interest, had had "stomach trouble" for some years. Her family stated that "spells" of some kind were of common occurrence, and were increasing in frequency. Examination showed her to be poorly developed and poorly nourished, weighing 98 pounds (44.5 kg.). Anemia was evident on casual observation, and the patient appeared listless. The hemoglobin was 60; no eosinophilia; stool negative for parasites; Wassermann reaction negative; urine normal; gastric analysis was not made. The appendix had been removed two years before examination.

Gastro-intestinal study was done by me at the physician's request. The chest was negative; cardiospasm was absent. The stomach, considerably dilated, lay in the pelvis with no waves appearing at the end of half an hour. The patient was sent away to return in one hour, at which time no food had passed through the pylorus. As the patient stepped from the fluoroscope she was seized with an epileptiform attack, which lasted for three or four minutes, immediately following which the stomach began emptying itself. Antiperistalsis of the second and third portions of the duodenum was greatly in evidence. There was some retention in six hours. No other pathologic change was noted.

The probability of parasites was suggested to the clinician, and after two examinations the laboratory reported positive stools for *Uncinaria*. The patient received three treatments for this condition before the stool was free from ova. She gained in weight. The "stomach trouble," together with the "spells," disappeared, and her physician tells me that she is well.

COMMENT

Certain of the patients in this series, after treatment for uncinariasis, have been reexamined by me, with the result that those who still showed the phenomenon have been sent back for further treatment, at which time multiple stool examinations still showed the presence of ova. In those cases in which, after treatment, the phenomenon has disappeared, it is interesting to note that repeated stool examination has shown no ova.

Unfortunately for purposes of this report, it has been impossible to secure blood and stool examinations on all patients who have presented themselves for gastro-intestinal studies, as would have been possible in a hospital with a well organized outpatient department. I am therefore unable to say what number of patients have been examined who were actually infected with parasites but who failed to exhibit evidence of retrograde peristalsis. This, I feel, is an important omission which I am hoping to correct in the future.

The pathologic changes that occur in the mucosa of the duodenum brought about by the presence of hookworms consist essentially of congestion of the mucosa, dotted over with small hemorrhagic spots to which the worms have attached themselves, and explain the manner in which anemia occurs. Is it possible that the mechanical irritation of the foreign bodies, i. e., hookworms, together with the minute ulcers just mentioned, can produce the phenomenon described in somewhat the same way as an ulcer of the bulb manifests its presence by spasm and distortion?

It is hoped that this report, based on a series of cases which I deem numerically insufficient, will stimulate interest in this field. Cooperation from any source will be appreciated.

CONCLUSIONS

1. The series of cases is too small to be conclusive.
2. Antiperistalsis in the second and third portions of the duodenum is not as rare as a perusal of the literature would suggest.
3. Ninety-four per cent. of cases with reverse peristalsis in the duodenum exhibited the ova of hookworms in the stool.
4. When the stool can be proved free of ova, the phenomenon is no longer evident.
5. The absence of eosinophilia does not necessarily rule out parasites.

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ACRODYNIA*

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It is questionable whether the disease that American writers are calling acrodynia is the same as the one which occurred in epidemic form in France in the year 1827, and within two years had attacked between forty and fifty thousand people. The term acrodynia (derived from two Greek words, meaning extremity and pain) was first given by Chardon in 1830 to this epidemic disease.

Acrodynia, or epidemic erythema, is a disease largely affecting adults and is characterized by an erythematous dermatitis especially affecting the palms and soles and followed by pigmentation. It is also followed by vomiting and diarrhea and frequently by cramps and spasms of the muscles, sometimes by paralysis of the legs and general anasarca. It generally runs a course of from two to four weeks, and recurrent attacks are not uncommon.

Recently, Petren,[1] in Sweden, pointed out the great probability of the famous acrodynia epidemic having been due to arsenical poisoning. Arsenic was used in the French wine districts for destroying the parasites that attack the grape vines.

The condition we are calling acrodynia in the United States occurs sporadically and only in infants and young children, and differs greatly in its clinical course from the disease described by the French writers. However, the name is being used in recent medical literature and will probably stay. It is a smooth sounding word and easy to remember, though not particularly descriptive; but many names of diseases are open to criticism. Swift of Adelaide, Australia, called it erythroedema, but was not satisfied with the name, as there is no edema. Clubbe of Sydney referred to it as pink disease, a name which accentuates the most evident symptom and the one most commonly used in Australia. Dermato-polyneuritis has been suggested by Hugh Thursfield[2] of London, a good term, as it specifies the structures involved.

It is a disease of the skin and the nervous system involving the vasomotor centers, the motor and the trophic nerves, but affecting particularly the sensory nerves. It is unfortunate that we do not have a suitable name for this striking clinical picture.

HISTORICAL

Is this a new disease in the United States? It does not seem possible that it could have existed previously and not have been recognized. While there are variations in the severity of the symptoms in different patients, the clinical picture as a whole is classical. It is as clear cut and definite as poliomyelitis or a meningitis.

I saw my first case in 1914, and felt that I had not seen anything like it before. During the next five years I saw several more cases; I exhibited the patients to a number of clinicians, but no one knew that the disease was.

In January, 1920, I[3] read a paper on this disease before the North Coast Pediatric Society, in Seattle, reporting ten cases. At that time there was absolutely nothing in the medical literature of the United States on the subject. Weston[4] of Columbia, S. C., reported these cases before the section on Diseases of Children at the New Orleans session of the American Medical Association in 1920, calling them acrodynia.

Byfield of Iowa City had observed this condition for a number of years and prepared a paper on the disease for the 1917 session of the Association; unfortunately, it was not read or published, except by title. In November, 1920, Byfield[5] reported seventeen cases, and his article was the best and most thorough description of the disease that had been published.

Brown[6] and his associates of Toronto have made an excellent contribution to the study of the disease. Zahorsky[7] of St. Louis has observed a number of cases, has been greatly interested in this condition, and has written several papers on the subject. His description of the clinical picture of the disease is excellent.

Probably there are now reports of more than a hundred cases that have been published in the United States during the last four years.

However, for more than thirty years the condition has been recognized in Australia as a distinct clinical entity. Littlejohn[8] states that the disease was first described by Swift of Adelaide in 1914, under the name erythroedema.

At the Australasian Medical Congress, held in Brisbane in 1920, Dr. Jeffreys Wood of Melbourne stated that he had frequently seen cases of the disease in Melbourne for the past thirty years and that his predecessor at the Children's Hospital, Dr. William Snowball, had recognized the complaint and was in the habit of referring to the patients as the children with the "raw-beef" hands and feet.

Clubbe has been familiar with the disease in Sydney for the last thirty years. However, even though the disease had existed for many years in Australia, no one had published an article on the condition until Swift read his paper before the Australasian Medical Congress at Auckland, New Zealand, in 1914. To Dr. Swift belongs the credit of being the first clinician to describe this condition (as it exists in children) under the name erythroedema.

CLINICAL PICTURE

While there are some variations in the symptoms, the cases as a whole are markedly similar. In pediatric practice we see many children that impress one as being more critically ill. However, in a well advanced case of acrodynia in a young child, the patient is a picture of abject misery; no one could look more utterly wretched. While in bed, the patient curls up and burrows his head in the pillow, or sits up with his face held down between his legs. If carried, the child will not hold his head up and begs piteously to be put back in bed. This is particularly so in the cases with photophobia. The child whines almost constantly and dislikes to be disturbed, so that it is very difficult to make an examination. On the face is an expression of abject wretchedness, a picture of extreme mental misery. The eyes are dull and lusterless and denote suffering, reminding one of a wounded animal.

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Paresthesia and pain of the hands and feet seem to be constant. The pain at times, particularly at night, is excruciating. The older children say that their hands and feet itch and burn like fire, and they will ask to have ice placed on them. Regardless of age, all the patients will rub their hands and feet together for hours. There may be areas of cutaneous anesthesia, but it has been very difficult to be positive about it.

The mental state varies greatly. At times the child acts maniacal, throwing and tossing himself about as if possessed, and being with great difficulty kept in bed. This is followed by a period of depression with marked apathy and stupor.

Insomnia has been present constantly for weeks at a time, and does not respond to treatment. Bromids, chloral and phenobarbital (luminal) have no effect, and not even morphin, unless given in large doses hypodermically.

I have never seen a true paralysis; but the muscles are soft and flabby, and all muscular movements are made slowly. The patellar reflexes are frequently diminished or abolished, but occasionally are markedly increased.

One of the dramatic occurrences is the loss of teeth; sometimes all that have erupted. Frequently before any pathologic condition of the mouth has been recognized, a perfectly sound tooth will be found in the child's bed. Then it is noticed within a short time that the other teeth are becoming loose in their sockets and finally drop out. The mucous membrane of the mouth seems a little redder than normal, but not spongy and swollen. However, after the teeth are lost an infection may occur in the mouth, with necrosis and shedding of the jaw bone for weeks. At this time the mouth presents an appearance similar to ulcerative stomatitis; the gums are swollen and ulcerated; saliva is profuse, and the odor fetid.

In the later cases, because I have learned to watch the mouth closely, I find that the gums, particularly about the incisors, are a deep, dusky red, even when there is no loss of teeth. The tongue frequently has a raw beef color.

The most striking symptom is the pink color of the hands and feet. The erythema is more marked at the ends of the fingers and toes, shading off imperceptibly at the wrist and not extending up the arm. The line of demarcation is not abrupt, as in pellagra. This involvement of the hands and feet is symmetrical and practically constant, often fading, to reappear after a week or ten days. The erythema is not as marked on the dorsal surface of the feet. Frequently, fine red papules not larger than a pin head develop on the erythematous background. Desquamation occurs at frequent intervals, involving the palms and soles but particularly the fingers and toes. This is a marked and distinctive symptom. The palms and soles are pigmented, having a peculiar purplish-pink color.

The hands and feet are cold and clammy, and feel as if they had been kept in water for a long time. They appear swollen, but there is no edema. Occasionally the lips, cheek and tip of the nose are a brilliant pink. The eruption of the body and extremities is not constant, and it frequently fades, leaving areas of slight pigmentation. It reappears at frequent intervals and as a rule is a pink disseminated maculopapular-papulovesicular rash, greatly modified at times by the irritating perspiration that macerates the skin. The perspiration is marked and occurs over the entire body, saturating the bed clothing. I do not know of any disease in which the perspiration is so excessive and constant. The saliva is increased, and will often run from the mouth in a small stream during sleep. The nails in many cases are purplish, and occasionally are lost. Marked anorexia is an almost constant symptom, with consequent loss of weight. Vomiting rarely occurs. The bowel movements are often loose and very foul. Photophobia occurs in many children, often lasting for months. In a well established case, the temperature is normal or, at most, only a degree or so higher unless there are complications, as a pyelitis.

LABORATORY FINDINGS

The nose and throat cultures are negative. The red blood corpuscles are slightly decreased; the white corpuscles are from 8,000 to 24,000; there is a relative increase in polymorphonuclears. The blood Wassermann and the Pirquet reaction are negative. The urine occasionally contains a small amount of albumin and pus cells. The spinal fluid is clear and not under increased pressure; there is no increase in cells. The spinal fluid Wassermann reaction is negative.

The course of the disease is essentially chronic. It develops slowly and insidiously. At first it is noticed that the child is listless and irritable, the appetite is poor and fever of a moderate degree occurs. It may persist for two or three weeks, and cannot be accounted for except in some cases in which there is a reddened throat and coryza is present. After a long period of invasion, it is noticed that the hands and feet are pink; pain, itching and burning occur in them; transitory rashes appear on the trunk and extremities; perspiration becomes noticeable; insomnia and general wretchedness become marked. Then it dawns on us that we are confronted with the classical picture of a bizzare symptom-complex that, for the lack of a more appropriate name, we call acrodynia.

While the disease may last several months, recovery is complete with no sequelae.

A few deaths have occurred from intercurrent infections, tuberculosis or starvation. In the few earlier postmortems that were performed, nothing definite was found in the cerebrospinal system to account for the symptoms. Recently, Paterson and Greenfield[9] reported five cases, giving the necropsy findings in two. Their pathologic report is the most thorough and brilliant contribution that has been made in regard to the disease.

Their examinations showed considerable myelin destruction in some fibers of the peripheral nerves. In the calf muscles, the majority of the finer nerve bundles were completely demyelinated, and bundles containing from ten to twelve nerve fibers showed complete demyelination of all but two or three. In the popliteal space, on the other hand, only a small proportion of the fibers of the main nerve trunks showed myelin degeneration. In the central nervous system in both cases, there was a diffuse increase of small cells in the gray matter, especially in the lumbosacral enlargement of the cord. Their conclusion is that there is pathologic evidence of peripheral neuritis and of chronic inflammatory changes in the spinal cord and nerve roots, in which the sensory nerve fibers are affected more than the motor nerve fibers.

ETIOLOGY

The etiology of acrodynia is unknown. Evidently it is not a deficiency disease, but the symptoms are sug-

9. Paterson, D., and Greenfield, J. G.: Erythroedema Polyneuritis, Quart. J. Med. **17**: 6 (Oct.) 1923.

gestive of other deficiency diseases, notably pellagra. It may occur in breast fed babies or in young children who have a generous diet of milk and vegetables. Most of the cases coming under my observation have been from the small towns or farms in Oregon, where an exceptionally good environment existed, and in no case has the food seemed to be deficient.

It is probably an infection, or the aftermath of one. In many cases even with a normal temperature there is a leukocytosis with a relative increase in polymorphonuclears. Many of the children give a history of having been ill a few weeks earlier, at which time the distinctive symptom has been fever. Some, but not all, may have had a coryza concurrent with the fever. Thousands of children have an upper respiratory tract infection, but rarely is it followed by anything that even suggests acrodynia. The portal of entry may be the nasopharynx as it is in many diseases, such as poliomyelitis and meningitis, but we have no definite proof. It has been suggested that it is a sequela of influenza. Considering the fact that several million cases of influenza have occurred in the United States during the last few years, it would seem that cases of acrodynia in adults should have followed.

Acrodynia has as clear cut and definite symptoms as any other disease. As it lends itself easily to description, the reports have all been monotonously alike. Many excellent papers have been written describing with infinite detail the clinical picture. However, what is wanted is the known cause that may lead to a definite remedy. Laboratory investigations have been uniformly negative.

Inoculation experiments with the spinal fluid might be of interest; it is questionable, however, whether small animals would be susceptible even though the spinal fluid contained the specific organisms. Flexner and Lewis, by intracranial inoculations of monkeys with the spinal cord of a patient dying of poliomyelitis, had no difficulty in reproducing the disease and transmitting it through an indefinite series of monkeys. If a similar experiment could be performed with a case of acrodynia, we could prove definitely that the disease is an infection.

TREATMENT

Unfortunately, there is no specific treatment. Until we know more about the etiology, the treatment will remain symptomatic.

Atropin for the perspiration and calamine lotion for the irritation of the skin constitute the treatment.

When one observes a child with acrodynia and realizes how little he has to offer, he feels like a therapeutic pauper.

The diet should be simple, nutritious and rich in vitamins. However, as acrodynia is not a deficiency disease, the kind of food will not shorten the course of the complaint.

Many children will refuse all food, and it will be necessary to feed by gavage.

Dr. Jay Schamberg, in describing pellagra, states that the most characteristic symptoms are indicated by the alliterative formula, the three D's—dermatitis, diarrhea and depression. Paraphrasing the formula, the characteristic symptoms of acrodynia are denoted by the six P's—pain, pink hands and feet, peeling, prostration, paresthesia and perspiration.

I have had up to the present time twenty cases; they are all markedly alike. A report of the individual cases would simply be a monotonous repetition. The usual incidence of the disease occurs in children of from 6 months to 2 years. The following case is that of the oldest patient I have ever had, 7½ years, and consequently he has been able to describe subjective symptoms which naturally has been impossible in the younger children.

REPORT OF CASE

History.—C. E., a boy, aged 7½ years, came as an office patient, April 8, 1924, with a history of not having felt well for several weeks. Recently he had become restless and nervous, and he was easily fatigued. He complained that his back and legs hurt him. The child did not appear particularly ill. A physical examination was negative, except that the throat was slightly reddened. The temperature was 99.8 F.; the white blood count, 13,600; urine, negative.

Fig. 1.—Typical early desquamation; skin, vivid pink.

He was brought back to the office two weeks later, April 22, with the history that he was unable to sleep. He said that he had peculiar sensations in his hands; for instance, when he grasped a glass of cold water it felt like an electric shock. He complained of being cold, but had been having a temperature of from 100 to 102 F. The hands and feet were slightly reddened, particularly at the fingers and toes. Perspiration was marked. The urine was normal, with the exception of a few granular casts. Blood examination showed: hemoglobin, 85 per cent.; red blood corpuscles, 4,500,000; white blood corpuscles, 11,400. The heart was very rapid, but there were no murmurs. The throat was red, with considerable mucus in the nasopharynx. The patellar reflexes were increased. The patient had remained in bed during the previous two weeks.

The child came from one of the smaller towns of Oregon, and as the symptoms were somewhat suggestive of a beginning acrodynia, I requested that he remain in Portland for observation.

Course of the Disease.—After a few days, he developed the classical symptoms of the disease. While he did not seem to be mentally depressed, his disposition had changed. He fretted about trivial things and worried about missing school, for fear that he would not make his grade, and also about his doctor's bill. This is a most unusual thing for any one to do, particularly a child.

Photophobia was never present. Insomnia occurred many nights even when there was no pain. At times it was very difficult for him to go to sleep, or he would awaken at 2 or 3 o'clock and remain awake until the following night.

The pain in the hands and feet at times was very severe, frequently almost unbearable. He said that they itched and burned and that they seemed on fire. He wanted to bite them

and tear the flesh from the bones. However, during examination, pressure or manipulation caused him no discomfort. He rubbed his hands and feet together for hours at a time. Occasionally he complained bitterly that the pains ran up and down the entire length of his arms and legs. I had never been able to determine this before. At times his back pained him. He was not particularly prostrated, nor did he have the acrodynia facies.

He did not want to get out of bed, but he could walk and would do so slowly; after a few steps, he would stop and sit down on the floor. There was no paralysis and no incoordination, but a marked hypotonia. The patellar reflexes were markedly increased; in fact, they were the most violent I have ever seen in any disease. This was most unusual, as they are generally lost.

Perspiration was excessive. The entire bed clothes were changed as many as five times a day; the patient's night-gown was removed several times daily, soaked so that water could easily have been wrung from it.

The ears, throat, nose, lungs, abdomen and heart were all normal. Occasionally, tachycardia occurred. The appetite was good. After May 1, there was no elevation of temperature. Prostration was never as marked as in infants or younger children.

The mucous membrane of the mouth presented a peculiar beefy mottling, particularly involving the gums. The skin of the trunk and extremities in a general way presented a disseminated, superficial, pink, maculopapular eruption. The individual lesions were superficially blanched on pressure and were sparsely distributed over the trunk and closely grouped over the extremities, particularly the hands and feet.

In the latter locations, the lesions were so closely grouped as to be confluent in places, and many of them were capped

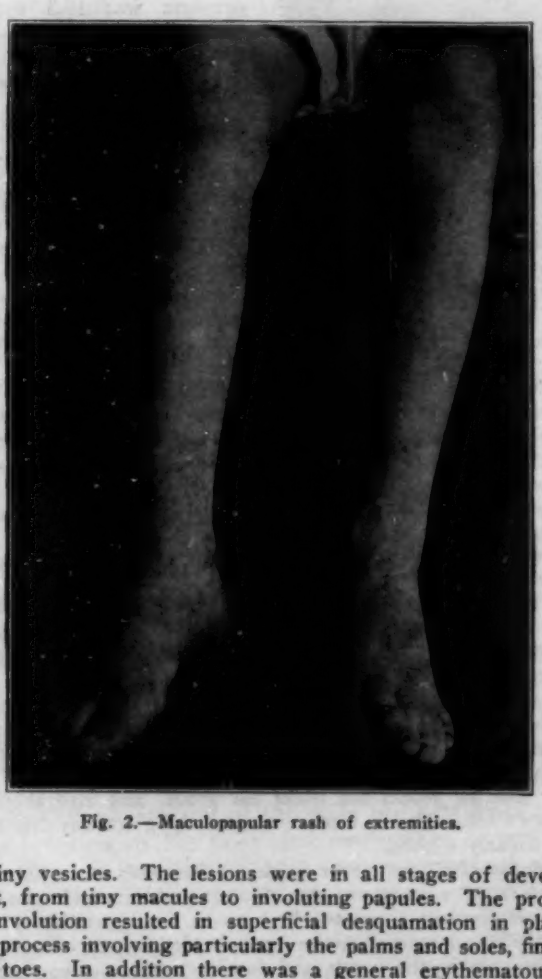

Fig. 2.—Maculopapular rash of extremities.

by tiny vesicles. The lesions were in all stages of development, from tiny macules to involuting papules. The process of involution resulted in superficial desquamation in places, this process involving particularly the palms and soles, fingers and toes. In addition there was a general erythematous or raw-beef hue over the hands and feet, but ending abruptly along the lateral aspect of the foot. This peculiar, sharply defined involvement might well be likened to a glove, the dorsal half of which is removed. The latter involvement is suggestive of the changes sometimes seen in pellagra.

As the disease is essentially chronic, taking several months to run its course, the patient was allowed to return to his home in the country, May 20. He was brought back, June 2, for observation. There was no change in his condition except

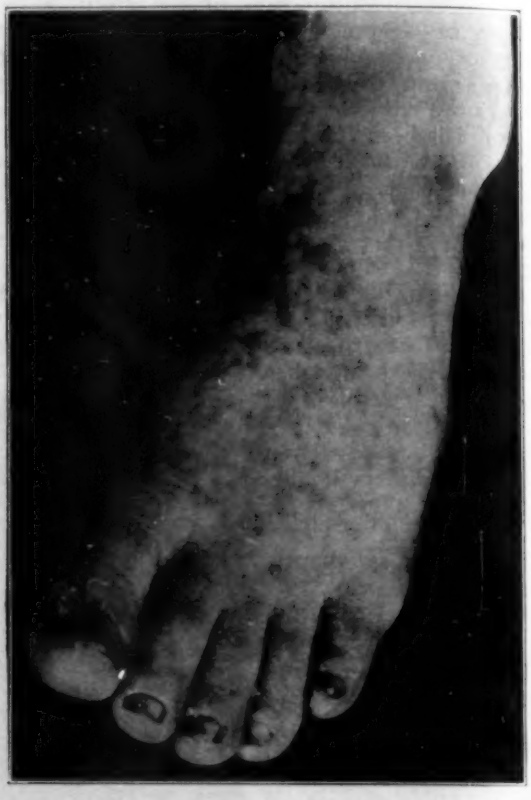

Fig. 3.—Characteristic desquamation of toes and discoloration of toe nails (purple).

that the perspiration was less. The palms of the hands and soles of the feet were greatly thickened and horny. The mother referred to them as alligator skin. The inability to sleep was still present, and the pain and the burning and itching of the hands and feet were at times almost unbearable.

His speech was slow, and he slurred the words so at times it was difficult to understand him. Frequently he started a sentence but did not finish it, either through mental apathy or because he did not remember what he started talking about. I had never had an opportunity to observe any peculiarity of speech or memory before.

Unless some unforeseen complication develops, he will ultimately recover; but it will be many months before he is normal again, either physically or mentally.

Corbett Building.

American Society for the Control of Cancer.—A recent bulletin of this society says that the purpose of its campaign is to prevent cancer as far as possible, to increase the number of cures and relieve suffering in incurable cases, but no definite goal has been set as a mark to indicate the success or failure of the undertaking. The purpose is to make the fullest possible use of every helpful fact, and to count on the intelligence and energy put into this effort rather than on any mathematical measure as the best indication of the value of the work. The society is earnestly striving to reduce the cancer death rate, but until more is known of how cancer can be prevented and cured and until the public has this information, it would be unreasonable to look for a decided reduction. There may be, in fact, an increase in the recorded death rate as a result of the society's efforts, for as better information is distributed, more cancer will be uncovered.

END-RESULTS OF OPERATION FOR CLAW-FOOT *

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AND
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In the course of an investigation to determine end-results in conditions treated at the New York Orthopaedic Dispensary and Hospital, a study was made of patients on whom an operation for claw-foot was performed.

The operation, which consists in the transference of the extensor digitorum longus and extensor hallucis longus tendons, was devised by Hibbs and was first described by him in 1919.[1] All such patients who were operated on from 1916 to 1921, and who responded to an appeal to return for examination, were included. In all, there were 124 patients, on sixty-two of whom the procedure was carried out on both feet, making in all 186 operations. The work was that of thirteen different surgeons. The cases were seen at an interval of from two to six years after operation. The original condition, for which the procedure was carried out, was claw-foot deformity with hammer-toes, impaired transverse arch with callus formation and more or less severe cavus. In addition, there were in this series a number of other cases with various types of deformity of the foot, which included hyperextension of the toes, but which were not in other respects typical claw-foot. The field of usefulness of the operation was thus extended beyond that for which it was first planned.

Other operative procedures were carried out when indicated, either preliminary to or in conjunction with the tendon transplant. For instance, in the majority of the cases it was necessary to correct the cavus before transplanting the tendons, and in many the Achilles tendon had to be lengthened. The latter can always be done at the same time as the transplant. Since the majority of the patients had anterior poliomyelitis, some had had operations, such as correction of flexion deformity of the hip, which had no direct bearing on the deformity of the foot.

The purpose of the operation is to remove the deforming action of the long extensors on the toes and to enhance their power as dorsiflexors of the foot. In order to accomplish this, the tendons are divided near the base of the toes and passed through a tunnel in the cuneiform bones. The operation regularly is done with a tourniquet applied.

An oblique incision is made across the dorsum of the foot. Through this the extensor hallucis longus and the four tendons of the extensor digitorum longus are divided at the bases of their respective toes and retracted upward. A tunnel is now prepared for the reception of these tendons, the placing of which depends on whether it is desired to transfer the pull of the muscles to the inner, middle or outer side of the foot. The tunnel usually is made in one of the cuneiform bones, although it may be made in the base of one or more metatarsals or in the cuboid. It is sometimes necessary to bore through two adjacent bones. After the periosteum has been incised and reflected, a drill hole is made obliquely down first from one and then from the other side of the bone until the two tunnels meet. The angle at the point of junction is then rounded off with a curet. It is necessary that the tunnel be sufficiently large in diameter to admit the passage of the tendons fairly easily, but at the same time care must be taken not to weaken the roof.

The tendons are next brought through the tunnel. Before doing this, however, it is important to scrape all the sheath from their surfaces in order that they may become more firmly attached to the bone. The extensor digitorum longus tendons are first drawn through from the outer to the inner side. These tendons are then secured with a clamp while the extensor hallucis longus is drawn through from the inner side. The tendons are then sutured to each other with chromic catgut.

The toes, which have been cocked up in the hammer-toe position, are stretched. Because of the tendency for subsequent flexion at the phalangeal joint of the great toe, this is now curetted in all cases to produce an arthrodesis. If it is thought that the smaller toes will have a tendency to curl under, some of the phalangeal joints in them are also arthrodesed. The toes are then strapped to a wooden plantar splint with the sole of the foot well padded. Over this a plaster cast is applied. The cast and splint are left on usually for six weeks, although they should be continued longer if there is any tendency for recurrence of deformity of the toes. Occasionally it is necessary to support the forefoot with a brace for a time following the removal of plaster because, in cases in which the transplanted muscles are not of good strength, swelling and the effect of gravity may weaken them almost irreparably. Massage and active movements are begun, and walking is soon started.

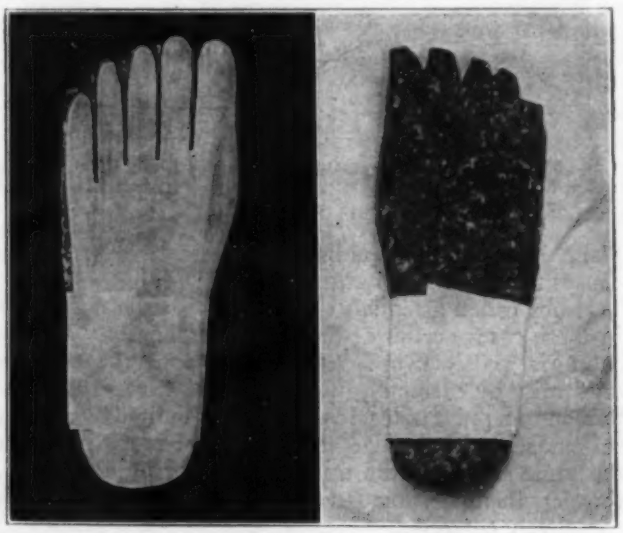

Fig. 1.—Wood splint, which is incorporated in the plaster cast; that side of the splint which is placed against the foot is padded with felt.

Before transplanting the tendons, it is essential to correct any cavus that may be present. This has been accomplished through an incision on the inner side of the heel above the fat pad. The plantar fascia is divided and the plantar ligaments are stripped subperiosteally from the os calcis, according to the method of Steindler.[2] This must be done very thoroughly, because

* From the Clinic of the New York Orthopedic Dispensary and Hospital.

1. Hibbs, R. A.: An Operation for Claw-Foot, J. A. M. A. **73**: 1583 (Nov. 22) 1919.

2. Steindler, Arthur: Operative Treatment of Pes Cavus, Surg., Gynec. & Obst. **24**: 612 (May) 1917.

there is a marked tendency for the cavus deformity to recur. If the correction is complete, weight bearing will keep it so, for the reason that there is then insufficient leverage for the original causes to operate. In many of the older cases it is necessary to remove a wedge from the mediotarsal joint. If there is any lateral instability, the subastragaloid joint is arthrodesed at the same time. The correction of the cavus should be done before rather than at the time of the tendon transplant, because the combining of these two operations causes too great traumatism.

Fig. 2.—Plaster bandage applied over the splint immediately after the tendon transplant. The toes, after having been stretched, are strapped to the splint.

Hibbs called attention to the fact that the deformity in these cases occurs at the mediotarsal joint. It thus often is possible to overcome an apparent equinus deformity by correcting the cavus. If, however, dorsiflexion to a point beyond 90 degrees is limited by a short calf muscle, the Achilles tendon must be lengthened at the same time that the transplant is done. Of course, this lengthening should not be done until the cavus is completely corrected.

The type of case for which this operation was devised, and for which it should be reserved, is a claw-foot with hyperextension of the toes. It is a mistake to depend on this procedure to overcome any lateral instability in the foot. If such is present, a subastragaloid arthrodesis should be done. It is believed that in the majority of cases this deformity is caused by a weakness of the intrinsic muscles, notably the lumbricales, which are the important flexors of the metatarsophalangeal joint. The extensors of these joints, the extensor digitorum longus, are then proportionately overactive. It is also probable that in certain cases of muscle-bound foot, in which dorsiflexion is limited by a short calf muscle, the causative factor is overactivity of the long toe extensors in their effort to dorsiflex the foot, whereby a paretic condition of the lumbricales is produced and the same condition results.

The age of the patients in this series was as follows: from 5 to 10 years, twenty-nine cases; from 10 to 15 years, fifty-six cases; from 15 to 20 years, twenty-two cases; from 20 to 30 years, fifteen cases; from 30 to 45 years, three cases. The causative factor was anterior poliomyelitis in 116 cases; muscle-bound feet in four cases; congenital clubfoot in two cases and spastic paralysis in two cases.

Cavus deformity was present in 163 feet, being severe in sixty-six feet, moderate in sixty-two and slight in thirty-five. Eighty-four of these cases were equinovarus in type; equinovalgus was present in thirty-nine feet, and miscellaneous deformities in fifteen. Callosities were severe in forty-six, moderate in thirty-six and slight in eighty-one.

Other treatment carried out previous to the transplant operation included sixty-six operations for correction of cavus, six operations for lengthening of the Achilles tendon, three subastragaloid arthrodeses, and various other types of transplants, such as that of the peronei to the inner side of the foot and of the extensor hallucis into the first metatarsal. Transplants of this type have since been abandoned, because we believe that they inevitably fail when subjected to the test of weight bearing.

The transplanted tendons were placed in the external cuneiform bone in 114 instances, the internal cuneiform in thirty-two, and the middle cuneiform in twenty-three. In ten the transplant was into the outer and middle cuneiforms or into the bases of the metatarsals. In one foot, the transplant was into the cuboid.

Other operations done simultaneously with the transplant were: correction of cavus, twenty-two; lengthening of the Achilles tendon, thirty-seven, and subastragaloid arthrodesis, nine. It is believed, as a result of the experience gained in these cases, that it is a mistake to combine any extensive traumatizing procedure, such as subastragaloid arthrodesis or radical correction of cavus, with the transplant operation, because the resulting trauma is too great. It is, however, possible to do simple subcutaneous division of the plantar fascia at the same time.

Plantar splints for the toes were used in a majority of cases. They are now used as a routine and are left on usually for six weeks. Especial care should be used in applying the strapping to the toes. A plaster cast was applied after operation in all cases. In the majority it was worn for six weeks, although it was continued for a longer time in some and a shorter time in others. Assuming that the cavus has already been corrected, six weeks usually is a sufficient time for keeping on the plaster.

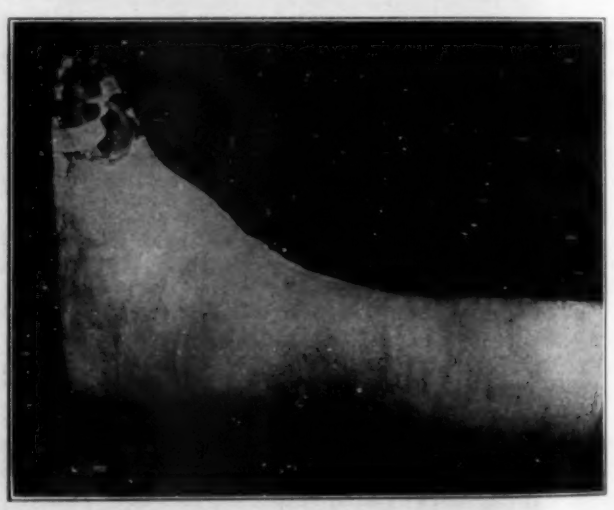

Fig. 3.—Lateral view of the postoperative dressing. It is important to have the foot dorsiflexed to 90 degrees. This may require lengthening of the Achilles tendon.

The complications in this series include infection in 5.3 per cent., and failure of the wound to heal by first

intention, but with no primary infection, in 5.8 per cent. In the majority of cases, the infection was superficial and did not affect the result.

In estimating the results, account was taken of the condition of the toes, the correction of the cavus deformity, the strength and activity of the transplanted muscles, the ability of the patient to walk, the appearance of the foot, the general functional result, and finally the combination of all these factors. The figures given are percentages.

The hammer-toe deformity was completely corrected in 64.5 per cent.; slight or moderate deformity remained in 21 per cent., severe deformity in 5.8 per cent.; toes curled under or cramped, 8.5 per cent. The cavus was corrected in 41.4 per cent.; it remained to a slight or moderate extent in 40.3 per cent., and was severe or recurred in 8.0 per cent. In 10.2 per cent., none was present before operating. The transplanted muscles were strong, active and well balanced in 72.0 per cent.; weak but well balanced, in 8.0 per cent.; outbalanced by other muscles, in 6.4 per cent.; factors in producing deformity, in 8.0 per cent.; acting as adductors of forefoot, in 2.6 per cent.; in poor position, in 2.6 per cent. In only two cases did they break away from their anchorage. Walking, which depended to some extent on conditions above the foot, as well as on the foot itself, was excellent or good in 72.5 per cent., and fair or poor in 27.5 per cent. The general functional result was excellent or good in 76.9 per cent., and fair or poor in 23.1 per cent. The cosmetic result was excellent or good in 72.0 per cent., and fair or poor in 28 per cent. The total result, considering all factors, was estimated as excellent or good in 74.2 per cent., and fair or poor in 25.7 per cent. The result in cases of spastic paralysis is apt to be poor because flexion deformity of the toes occurs.

The causes of failure in the fair and poor results included incomplete correction of the cavus, drop-foot because of weakness of the anterior muscle group, including the transplanted ones, failure to splint the toes long enough to prevent recurrence of extension deformity, and poor lateral balance. Other failures undoubtedly were due to poor selection of cases. Muscles cannot be expected to correct bony deformity or to take up the work of muscles stronger than themselves. In three cases in which the toes were not efficiently splinted, the tendons regenerated along their sheaths and became reattached. They had to be tenotomized and the toes again splinted at a subsequent date.

CONCLUSIONS

1. The results of operation for transplant of the long toe extensors in cases of claw-foot are very satisfactory in properly selected cases because the mechanics are sufficiently changed to prevent recurrence of the deformity.

2. The cavus deformity first must be thoroughly corrected. In cases in which this is due to bony deformity, it may be corrected by resection of the mediotarsal joint, but in these the removal of bone should be sufficient to accomplish the correction without extensive division of the plantar structures.

3. Any equinus must be corrected before or at the time of the operation.

4. If any lateral instability is present, a subastragaloid arthrodesis must be performed prior to the transplant.

5. No other procedure involving trauma to the foot should be combined with the transplant operation.

6. The causes of bad results were failure to splint the toes long enough, with resulting recurrence of hyperextension; tendency of the toes to curl under following the transplant; incomplete correction of cavus; drop-foot because of weakness of the anterior group, including transplanted muscles, and poor lateral balance.

7. The negative effect of transplant on the toes frequently may be good, even though the transplanted muscles are too weak to have much positive effect in dorsiflexing the foot.

420 East Fifty-Ninth Street.

CONGENITAL ESOPHAGEAL STENOSIS ABOVE CARDIAC ORIFICE

A NEW METHOD OF SURGICAL TREATMENT *

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Esophageal stenosis in the lower end of the esophagus is extremely rare and is usually accompanied by several other congenital anomalies of the gastrointestinal tract. The stenosis is never complete; in fact, anatomically it may be only of slight degree; but to this partial anatomic stenosis is added the physiologic stenosis produced by spasm of the esophagus. The pathologic condition in congenital pyloric stenosis is similar, but the symptoms vary with the type of organ proximal to the stricture. In pyloric stenosis, the proximal organ is the stomach, which retains food for an average of three hours and has a churning action; therefore, obstruction produces projectile vomiting and marked peristaltic waves, which can be observed passing over the abdomen. In lower esophageal stenosis, the proximal organ is the esophagus, a tube whose only function is to pass on the food directly to the stomach. Thus, the symptoms of congenital pyloric stenosis and congenital lower esophageal stenosis are very different.

PATHOLOGY

Marked, thickened bands of connective tissue extend from the lower border of the diaphragm to the esophagus just where it enters the stomach. In the narrowed portion, of which the lumen is usually about 0.3 cm. and the length from 1 to 1.5 cm., the mucosa is folded longitudinally and the muscularis is about three or four times its normal thickness. In cases of some duration, the entire esophagus is markedly dilated above the constriction, especially in the lower half, where it forms a large bulging sac, about 6 cm. in its widest diameter, and the wall of this sac becomes hypertrophied.

The pathologic picture at operation and the configuration of the roentgenograms were so alike in our three cases that they might be taken for one case. Fluoroscopic examination revealed a narrowing of the esophagus just above the diaphragm, and from there upward a marked saccular dilatation (Fig. 1). When the sac was filled with barium, marked peristaltic waves and retroperistalsis were seen.

As to other anomalies associated with this condition: In one case there was slight hypertrophy of the pylorus as in congenital pyloric stenosis; a nonrotated cecum,

* From the surgical and pediatric services of the Michael Reese Hospital.

located to the left of the gallbladder under the liver, and a well formed Meckel's diverticulum. In another case, there was such lack of rotation of the cecum that the cecum and colon formed a straight tube from underneath the liver, left of the midline, to the rectum.

SYMPTOMS

The fact that the patients came for treatment usually between 2 and 3 years of age, in itself shows the chronicity of the condition and indicates only a partial obstruction. The symptoms become pronounced at the age when the infant is given solid food; he has vomiting spells, which vary in intensity and frequency with the amount of esophageal dilatation, spasticity, and retroperistalsis. Not infrequently the child does not vomit for several weeks when given only finely divided food, such as cereals, milk and custards, but there are periods when he cannot swallow any semi-solid food and retains little liquid. These patients may acquire such tolerance to food remaining in the dilated part of the esophagus that, two hours after eating, they vomit large quantities of food, which is alkaline in reaction and has never passed into the stomach; or on attempting to eat in the morning, they may vomit large quantities of mucus that has accumulated in the large dilated sac of the esophagus during the night. In the latter case, repeated attacks of bronchitis occur, owing to aspiration of large amounts of saliva and retained food.

The children are greatly undernourished; one of our patients weighed only 14 pounds (6.4 kg.) at twenty-

Fig. 1.—Dilated sac of esophagus.

eight months; another, 18 pounds (8 kg.) at thirty-two months. In each case there was a history of numerous attempts to dilate the esophagus by the usual methods of esophageal dilation, which sometimes relieves the patient temporarily, but in one case made the patient distinctly worse so that for five days he was unable to swallow any liquid. This was probably due to the edema resulting from the trauma.

TREATMENT

It was interesting to hear the mother state that practically after each dilation the child had a severe bronchitis or mild bronchopneumonia, and once when we tried to pass a catheter on a flexible wire for the purpose of investigating fluoroscopically the extent of the stenosis and length of the stricture, the child developed

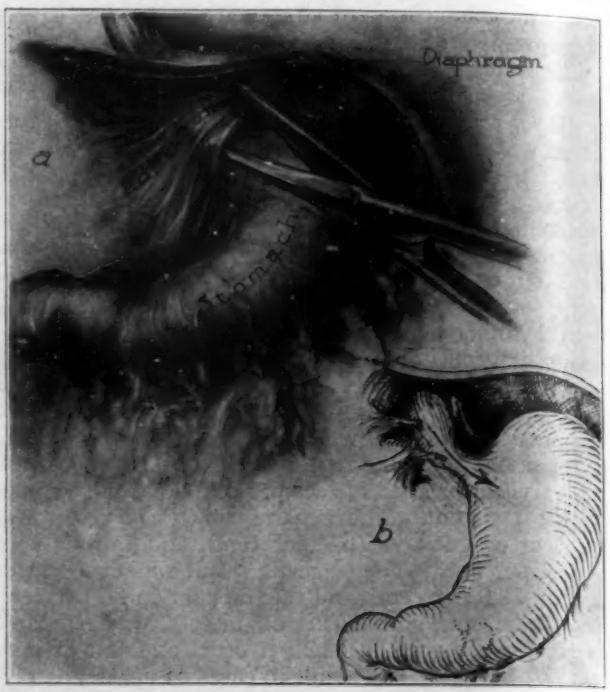

Fig. 2.—*a*, adhesions cut which pass from diaphragm around esophagus; *b*, cut adhesions; esophagus pulled through hiatus of diaphragm after esophagus has been freed by the passage of a finger through the hiatus.

such a severe bronchopneumonia that operation had to be postponed for three weeks. Considering the marked emaciation and underdevelopment of these children, the history of many unsuccessful attempts at esophageal dilation, the fatal ruptures of the esophagus as a result of dilation, the fatal bronchopneumonias following dilation or gastrostomy, and the agony endured in the effort to swallow, I felt that some radical procedure, no matter how slight the chance of success, would be justifiable. The first operation was performed in 1921, and the following surgical procedure was carried out:

Through a midline incision from the xiphoid cartilage to the umbilicus, the cardiac end of the stomach was exposed. In all of our three cases, marked connective tissue bands were observed to run from the diaphragm around the esophagus where it entered the stomach. After dividing these bands (Fig. 2*a*), we were able to pass the little finger through the hiatus of the diaphragm and loosen the esophagus from the surrounding structures for about 4 or 5 cm. By downward traction on the esophagus and stomach, and by pushing the diaphragm upward with two narrow ribbon-shaped retractors, we pulled 5 cm. of the esophagus with its constricted portion through the diaphragm. After that the procedure was simple, for all the structures were plainly in view (Fig. 2*b*). The anterior wall of the stomach was opened near the entrance of the esophagus, and a fine No. 8 French catheter passed through the opening of the stomach and the esophageal stricture out through the mouth (Fig. 3). A very small dilating instrument was then attached to the

catheter and traction applied until the instrument was pulled up into the most constricted portion of the esophagus. Three longitudinal incisions, about 2 cm. in length, one on each side and one anteriorly, were made (Fig. 4) through the muscularis down to the mucosa of the constricted portion, and the muscularis was slightly separated from the mucosa. At this stage the instrument passed easily and did not meet any more resistance. The anterior wall of the stomach was closed with three layers of sutures. A slight congenital pyloric stenosis was relieved by simple incision through the pylorus, and we noted that the child had also a nonrotated cecum, which ended mediad to the gallbladder under the liver, and a well developed Meckel's diverticulum on the ileum, about 25 cm. from the ileocecal valve.

The patient took fluid by mouth within twenty-four hours, was on a soft diet within four days, and on a full diet within one week, and gained 2 pounds (1 kg.) the first week. He developed a marked bronchitis immediately after operation, which lasted about eight days, but left the hospital four weeks after operation, having gained 5 pounds (2.3 kg.) and able to eat a full diet without difficulty; and now, aged 5, is a healthy, apparently normal boy.

The second patient was operated on in the same manner, but developed on the fourth day a pneumonia

Fig. 3.—Catheter pulled from stomach up through mouth and instrument pulled through stricture.

which proved fatal within eight days after the operation. He had also a nonrotated cecum.

The third patient was 28 months old and weighed 18 pounds (8 kg.). The same procedure was carried out except that, in order to prevent bronchopneumonia, this operation was performed under local anesthesia and no attempt was made to pass a catheter through the esophagus out through the mouth. If the pneumonias associated with this operation were of an aspiration type, it was felt that they would be prevented if we omitted the anesthetic and did not pass a catheter through the esophagus to encroach on the trachea. In spite of these precautions, the child did develop a slight bronchopneumonia after operation, but recovered.

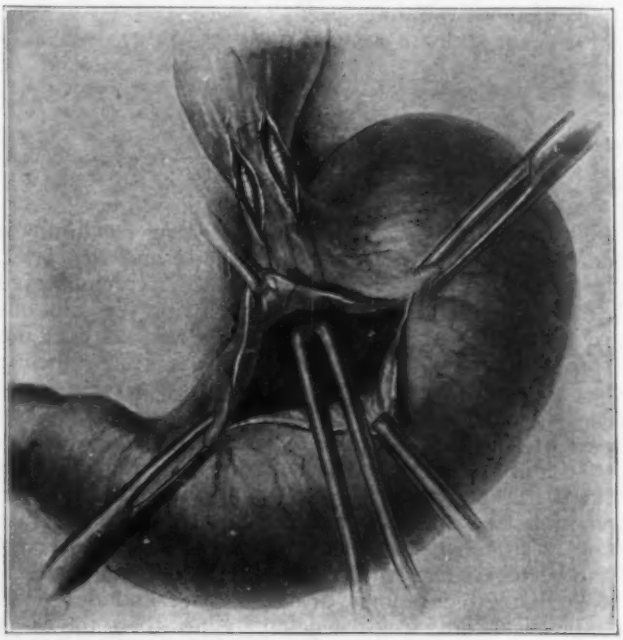

Fig. 4.—Cutting of muscularis around stricture; muscularis separated from mucosa, with relief of stricture.

THE LITERATURE

A study of the literature reveals that the majority of patients came under observation between 18 and 24 months of age, except a few who had such slight stenosis that they lived to old age. Practically all of those in whom gastrostomy was attempted died from bronchopneumonia or rupture of the esophagus.

Petersen [1] performed an antethoracal esophagoplastic operation for congenital esophageal stenosis in a girl, aged 17 years. He constructed a new esophagus from a loop of small intestine, by a series of three operations at two and four week intervals. The formation of a skin tube was the last step in the procedure. The success was complete.

In Frey's case,[2] a new-born infant vomited at once almost all he ingested. As he grew older, the difficulty in swallowing was intermittent. Several different hospital courses of dietetic treatment were ineffective. Esophagoscopy revealed a valvelike protrusion of normal mucosa 1 or 2 cm. above the cardia. Frey cut the free edge of this dilated portion, using small foreign-body forceps, and followed this with systematic dilating procedures every two or three days. In a month the boy was able to eat normally.

CONCLUSION

Direct operation on the esophagus, as described, is far less dangerous than dilation, because in a direct operation the parts are exposed so that every detail of

1. Petersen, O. H.: Artificial Esophagus of Congenital Stenosis, Beitr. z. klin. Chir. **124**: 705, 1921; abstr. J. A. M. A. **78**: 693 (March 4) 1922.
2. Frey, G.: Congenital Stenosis of Esophagus, Schweiz. med. Wchnschr. **52**: 498 (May 25) 1922; abstr. J. A. M. A. **79**: 413 (July 29) 1922.

the process is visible, and the pathologic condition is actually removed when the hypertrophied muscle around the constricted esophagus is cut, relieving the condition permanently. In esophageal dilation the work is done blindly, and relieves the condition only temporarily, and has ended many times in rupture of the esophagus, which was only discovered from twenty-four to forty-eight hours after dilation, by the symptoms of mediastinal abscess.

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PNEUMOPERICARDIUM *

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That pneumopericardium [1] is a rare condition is indicated by the fact that both Skoda and Schrötter, in spite of their vast clinical experience, never observed a case. Although the earliest obtainable descriptions are those of pathologists, who observed gas escaping from the pericardium at necropsy, the first authentic case report is that of Bricheteau, in 1844, who made the diagnosis, afterward confirmed at necropsy, on the basis of the physical signs. The bizarre and characteristic physical findings, which can hardly be mistaken for any other condition, have attracted the attention of students of physical diagnosis since that time, with the result that most of the cases observed have been reported in the literature. As early as 1855, Stokes collected reports of three cases and described the physical signs in great detail. Since then, the cases have been compiled by a number of authors, the last review being that of Rösler.[2] A careful search of the literature up to this time has revealed seventy-three cases, including the one to be reported here.

The cases are best classified according to their etiology. Four large groups can be recognized:

1. Spontaneous gas production from an infected fluid in the pericardium.
2. Traumatic perforation of the pericardium with inlet of air.
   - (*a*) Penetration of a foreign body through the chest wall.
   - (*b*) Perforation wound of the esophagus rupturing into the pericardium.
   - (*c*) Contusion of the thorax with or without fracture.
3. Perforation into the pericardium from a neighboring organ or perforation of a diseased pericardium into a neighboring organ.
   - (*a*) Rupture of a disease process in the lung or pleura, into the pericardium.
   - (*b*) Perforation of the pericardium by an ulcerative process in the esophagus or stomach.
   - (*c*) Rupture of a liver abscess into the pericardium.
   - (*d*) Pericardial suppuration perforating into a bronchus.
4. Artificial production of pneumopericardium either accidentally or therapeutically.

The symptoms of pneumopericardium, in contrast to the physical signs, are not at all characteristic. There may or may not be an attack of sudden dyspnea and sharp precordial pain. All other symptoms depend on the individual condition, such as sepsis in the cases with purulent effusion, or cyanosis in the cases with a massive amount of gas. The physical signs, on the other hand, are almost unmistakable. Tympany is present over the cardiac area, and it shifts with change in position. In the upright position, there is dulness in the inferior portion of the pericardial sac and tympany in the superior portion. On auscultation, in most cases, can be heard a splashing, gurgling or churning sound, synchronous with the heart beat. In addition, there may be a metallic tinkle or a metallic rub. Then, too, a tinkle may be produced on shaking the patient.

The physical signs must be distinguished chiefly from those produced by hydropneumothorax, pulmonary cavity and pneumomediastinum. The local character of the tympany, the absence of the characteristic heart signs and the definite changes in the breath and voice signs, which characterize the first two conditions, are sufficient to differentiate them. The third condition, the presence of gas in the mediastinum or peripericardial tissues, is more difficult to rule out, and the danger of confusing it with pneumopericardium has been emphasized by Saupe.[3]

Shortly after coming in contact with the case to be reported here, I observed a case of pneumomediastinum

Fig. 1.—Appearance of patient when first seen; the typical appearance of pericardial effusion; close proximity of the left side of the pericardium to the left chest wall.

in the service of Dr. A. E. Benjamin in the obstetric division of the Minneapolis General Hospital. This case of pneumomediastinum occurred in a woman with apparently normal lungs, following a normal delivery. There were no symptoms whatever, the condition being recognized in the course of a routine physical examination. There was tympany over the whole precordial area, which did not shift with position. Over the base of the heart were heard clicking râles, synchronous with the cardiac impulse, but increased on inspiration. There was no change in the heart sounds themselves. Emphysema of the cervical tissues was present. The latter finding is the most important differentiating point, as it occurs constantly in association with gas in the mediastinal tissues. In addition, the lack of symptoms, the absence of change in the heart sounds and the rapid disappearance of the signs serve to differentiate this condition. In the case mentioned above, the cardiac tympany and the emphysema of the cervical tissues were completely gone in four days.

* Read before the combined Parkview-Lymanhurst staff, April 22, 1924.
* From the Parkview Sanatorium and the University of Minnesota Medical School.

1. The presence of gas alone in the pericardial sac has been correctly termed pneumopericardium; the combined presence of gas and fluid should rightly be termed hydropneumopericardium or pyopneumopericardium. Because the former term has been used in the literature to designate both conditions, it is so used in this paper.
2. Rösler, O. A.: Fortschr. a. d. Geb. der Röntgenstrahlen **25**: 442, 1918.
3. Saupe: Fortschr. a. d. Geb. der Röntgenstrahlen **27**: 488, 1920.

The advent of the roentgen ray has obviously made the diagnosis both easy and unmistakable. The picture presented is clear-cut and characteristic. Wenckebach,[4] in 1910, published the first roentgenograms of this condition, showing the clear, gas-filled space about the cardiac shadow, surrounded by the narrow band of pericardium, with the shadow of a fluid level in the

Fig. 2.—Appearance after injection of air, patient prone; small, cardiac shadow surrounded by the clear, air-filled space and the distended, thickened pericardium, adherent to the left chest wall in its lower portion; inversion of the left diaphragm.

inferior portion of the pericardial sac. Since then, numerous case reports have been made, which included roentgenograms or roentgenographic reports. In a number of cases, the condition was discovered during fluoroscopy, not having been suspected before. Mayer [5] reports some difficulty in distinguishing the roentgen-ray picture of pneumomediastinum from that of pneumopericardium. The appearance of the former disease can be clearly differentiated from that of the latter by the presence of gas in the mediastinal tissues, appearing much as it does in emphysema of the subcutaneous tissues; that is, there are small areas of increased radiability separated by fine shadows. In pneumopericardium, the area of gas is homogeneous, and the pericardium itself stands out very clearly. In comparing the plates of the case of pneumomediastinum referred to above with those reproduced here, there appears to be very little resemblance.

The case reported here is from the service of Dr. J. E. Myers and Dr. Thomas Ziskin, and is published with their kind permission.

REPORT OF CASE

M. W., a colored woman, aged 26, came into the Minneapolis General Hospital, Oct. 17, 1922, complaining of high fever, weakness, diarrhea, vomiting and anorexia for the past two weeks. The family history and the past history were without significance. On entrance, the temperature was 102.6 F.; pulse, 100; respiration, 34; blood pressure, 118 systolic and 62 diastolic. The essential, positive, physical findings were confined to the chest. There was diminished expansion on the left, the inner portion of the left costal margin moving inward with inspiration. Impaired resonance shading into flatness was present from the third intercostal space anteriorly down to the base on the left side. There was dulness in the axilla and posteriorly up to the spine of the scapula. There was no apparent movement of the diaphragm. The breath sounds and voice sounds over the area of impairment were decreased. The cardiac dulness seemed to merge with the pleural dulness on the left, and extended 4 cm. to the right of the midsternal line in the fifth interspace. A soft systolic murmur, not transmitted, was present at the apex.

The intern made a diagnosis of left pleural effusion and did a diagnostic puncture at the midaxillary line in the sixth interspace. Twenty c.c. of a fairly clear fluid was obtained, which formed a pellicle and showed 59 per cent. mononuclear cells and no bacteria.

Following this procedure, a roentgenogram (Fig. 1) was made; the diagnosis of pericardial effusion was obvious. A week later, a pericardial friction rub was heard, which later disappeared. The temperature continued to range from 102 to 103 F., although the patient was not uncomfortable otherwise. The sputum was scanty, but was examined for tubercle bacilli repeatedly with no result.

March 7, 1923, a definite diagnosis of tuberculous pericarditis was made, and the patient was transferred to Parkview Sanatorium. Her course here was uneventful for a short time. Through some mistake, her previous record was not seen, and a physical examination here again revealed apparently a left pleural effusion.

July 11, a needle was inserted in the posterior axillary line in the seventh intercostal space, and 1,200 c.c. of cloudy fluid was withdrawn. This was injected into a guinea-pig, which, in a few weeks, developed numerous tubercles in its serous cavities. Two weeks later, another paracentesis was done; 250 c.c. of fluid was removed and 250 c.c. of air was injected, by the usual method for doing pneumothorax, in order to collapse the left lung. It was observed by the intern at this time that the manometer showed no respiratory oscillations. A week later, 220 c.c. of fluid was removed and 220 c.c. of air again injected.

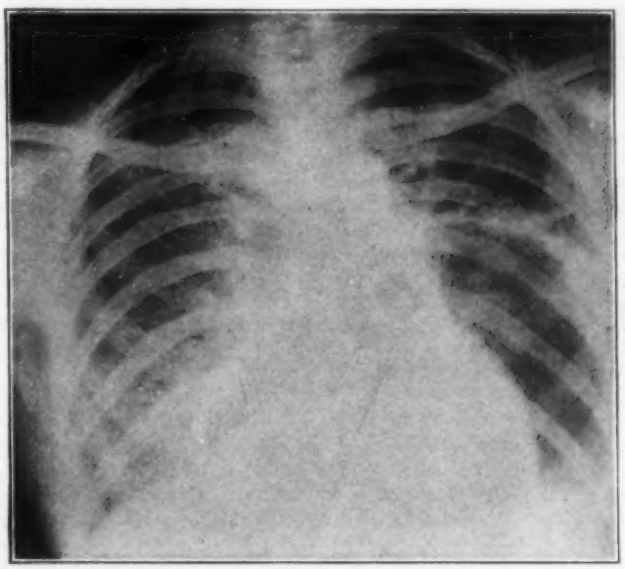


Fig. 3.—Appearance after injection of air, patient in the sitting position; fluid level in the lower portion of the pericardial sac; internal and external bands of adhesion between the two layers of the pericardium and between the parietal pericardium and the pleura.

Shortly afterward, the patient was sent to me for roentgen-ray examination, and the hydropneumopericardium present was revealed. The findings on this examination are shown in Figures 2 and 3; the former plate was taken with the patient prone, the latter, with the patient sitting up. The small cardiac shadow surrounded by gas should be noted. The greatly thickened pericardium can be clearly seen, and

4. Wenckebach: Ztschr. f. klin. Med. **71**: 402, 1910.
5. Mayer: Ztschr. f. klin. Med. **92**: 236, 1921.

the fluid level is evident in Figure 3. Adhesions between the two layers of the pericardium, as well as external adhesions, can also be seen.

Physical examination at this time revealed tympany over the cardiac area, which shifted with change in position. Furthermore, an area of dulness appeared at the fourth intercostal space, when the patient was sitting up. The heart sounds at the apex were almost imperceptible when the patient was

Fig. 4.—End-result of the injections of air and oxygen; no evidence of gas or fluid; adhesions between the pericardium and the left diaphragm and pleura.

prone. The sounds were normal at the base. A metallic tinkle was heard near the apex on shaking the patient. There was no bruit de moulin. Showers of râles were heard in the left upper posterior region on cough.

As the patient seemed much improved, September 4, aspiration was repeated, and 500 c.c. of air was injected; October 11, 700 c.c. of fluid was obtained and 600 c.c. of oxygen was injected; October 29, only 200 c.c. of fluid could be obtained, and 200 c.c. of oxygen was injected; December 3, paracentesis was attempted repeatedly, but no fluid could be obtained.

Jan. 29, 1924, the patient was reexamined, and the general condition was found unchanged. There was evidence in the temperature and pulse and in the physical findings of considerable activity in both lungs. The heart showed some apparent enlargement to the left, the sounds were not abnormal, and there was no tympany. Figure 4 shows the heart plate at this time. The absence of either fluid or gas in the pericardial cavity is obvious. The heart is pulled to the left and bound down to the left diaphragm and pleura by adhesions. There is now a chronic adhesive pericarditis.

COMMENT

The mode of production of this pneumopericardium serves to emphasize again the care that should be exercised in giving pneumothorax, and the importance of observing the manometer. Saupe [3] reports a very similar case produced in the same manner. It is easy to see both from the original and the later plates how the needle would pass into the pericardium when introduced in the usual manner for doing a thoracentesis.

The plates justify close examination. The appearance of the greatly thickened, parietal pericardium, with the adhesions both within and without, is instructive. The inversion of the left diaphragm, as shown effectively in Figure 2, is of considerable interest in connection with the work of Williamson.[6] He believes that the pushing down of the left lobe of the liver which follows the inversion of the left diaphragm is one of the earliest signs of pericardial effusion.

The therapeutic application of the injection of gas in pericardial effusion has been fully discussed by Wenckebach [4] and the literature recently reviewed by Oppenheimer.[7] The effusion was disposed of in this case, but the injection of gas did not prevent the formation of an adhesive pericarditis. The general result achieved by this treatment, in this case at least, is not especially encouraging.

6. Williamson, C. S.: Pericarditis with Effusion, Arch. Int. Med. **25**: 206 (Feb.) 1920.

SUMMARY

Reports of seventy-two cases of pneumopericardium, most of them complicated by the presence of fluid, have been collected.

The causes of this condition are: (1) spontaneous gas production; (2) traumatic perforation of the pericardium; (3) perforation from or into a neighboring organ, and (4) artificial injection of gas.

In a case of tuberculous pericarditis with effusion, air was injected into the pericardium on the assumption that an artificial pneumothorax was being produced. The therapeutic application of the injection of gas was tried in this case, and an adhesive pericarditis was the end-result.

Minneapolis General Hospital.

Clinical Notes, Suggestions, and New Instruments

A PECULIAR DISCOLORATION OF THE SKIN

SUPPLEMENTARY REPORT *

WILLIAM H. GOECKERMAN, M.D., ROCHESTER, MINN.

In 1922, I [1] reported two cases of pigmentation of the face as the result of using cosmetic containing calomel. At the time, this seemed a rather rare phenomenon, and was thought to be

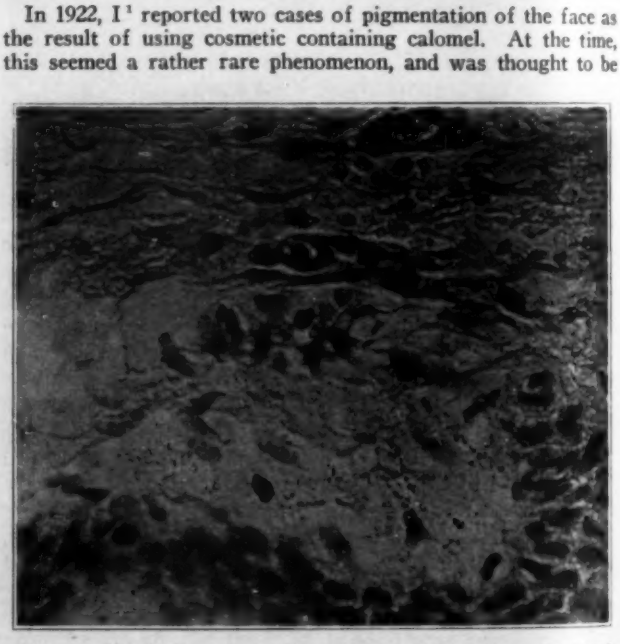


Fig. 1.—Distribution of granules of pigment throughout the dermis and epidermis.

dependent on a personal chemical peculiarity of the perspiration. Subsequent experience has demonstrated that such a peculiarity is not especially rare, if we may thus explain the pigmentation. Within the last year, I have seen thirteen more cases, in all

7. Oppenheimer, R. H.: Therapeutic Pneumocardium in Pericarditis with Effusion, J. A. M. A. **82**: 1685 (May 24) 1924.

* From the Section on Dermatology and Syphilology, Mayo Clinic.

1. Goeckerman, W. H.: A Peculiar Discoloration of the Skin, J. A. M. A. **79**: 605-607 (Aug. 19) 1922.

of which the distribution of the discoloration was very striking and readily recognizable. It is not uncommon to have one of the youngest dermatologic assistants make the diagnosis. Curiously enough, however, the general clinician rarely suspects the true nature of the pigmentation, but looks on it as an early addisonian pigmentation, an evidence of fatigue attendant on nervous exhaustion, or cardiac, hepatic or other chronic diseases, or disregards it entirely.

Fig. 2.—Corresponding field destained with compound solution of iodin.

When it was first recognized that calomel was instrumental in producing this discoloration, it at once became an interesting speculation as to whether we were dealing with a true pigmentation, or merely with a superficial staining or discoloration. This could probably be determined by a microscopic examination of the skin involved. From one of our patients we were able to obtain permission for a biopsy. The section was removed from a discolored portion on the posterior aspect of the neck. The photomicrograph shows that the pigment granules are found in all layers of the skin and in the subcutis (Fig. 1); they constitute a true pigmentation. There seems to be no special predilection for any of the layers of the skin, or its special structures, such as the glands. The fact that the granules are seen in different degrees of density throughout the cutis and subcutis would seem to indicate that they are gradually absorbed into the system. Incidentally, this would help to corroborate the conception that mercury used by inunction is actually absorbed by the skin.

The distribution of the granules also explains why little can be done by local applications to remove the deposit. Only such pigment as is found in the most superficial layers can be reached. The remainder is probably absorbed in time. This is in harmony with the clinical observations that after six months of discontinuance of the cosmetic, the discloration is less marked, but has not entirely disappeared. It would seem logical, in view of the fact that the mercury is gradually absorbed, to prescribe potassium iodid internally, or perhaps still better, sodium thiosulphate.

It might be argued that sufficient evidence has not been adduced to prove that the granules are mercury, and not some other pigment. The section did not contain sufficient mercury to admit of extraction and chemical analysis. It is, however, an everyday practice to remove the mercury deposits in tissues resulting from fixatives, such as Zenker's fluid, by compound solution of iodin.[2] Other extraneous pigments, such as silver, iron and arsenic and melanin deposits, cannot be removed by this solvent. We found that the pigment granules in our sections could be entirely removed by application of this solution (Fig. 2). The characteristic distribution of the pigmentation, the fact that the patients have used a cosmetic containing mercury, or sometimes calomel only, over a period of years, the apparently good physical condition of many patients, the distribution of the pigment granules in the section, and their ready solubility in compound solution of iodin make a fairly good argument for assuming that the pigment is the result of inunction of calomel in predisposed individuals.

2. This method of differentiating the mercury granules from the other pigment deposits was suggested by Mr. R. Lundquist of the department of pathology.

SICKLE CELL ANEMIA IN NORTHERN NEGRO*

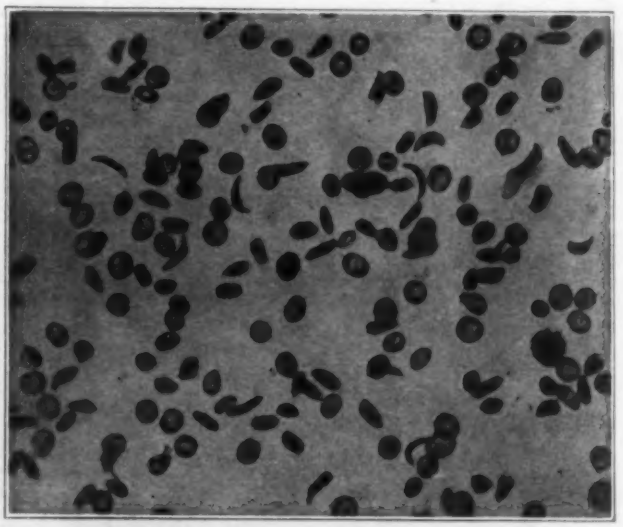
R. ALLYN MOSER, M.D., AND WILLIAM J. SHAW, A.M., OMAHA

Prior to 1923, four cases of sickle cell anemia had been reported. During May, 1923, Huck reported fourteen cases and Sydenstricker, Mulherin and Hauseal reported two cases. In July, 1924, Sydenstricker reported a series of eighty cases. All reported cases have apparently been in Southern negroes.

REPORT OF CASE

History.—C. T., a negro, aged 38, with a small admixture of Indian blood on his maternal side, entered the University Hospital, June 16, 1924, complaining of abnormal pain localized in the right iliac region. He knew very little of his family history, as both parents died when he was a child. He had one sister living and well, three daughters living and well, and had lost no children. He was born in northern Kansas (Leavenworth), where he resided until 8 years ago, and since then he had lived in South Dakota and Nebraska. He had "yellow jaundice" at the age of 8 years, with several similar attacks since. He did not remember definite dates. At the age of 12 he had typhoid fever, and in 1918 influenza.

Physical Examination.—The temperature was 100.4 F., the pulse 78, respiration 20; blood pressure, 132 systolic and 78 diastolic. The patient was well developed and well nourished. The pupils were equal and regular, and reacted to light and in accommodation. The sclerae were markedly jaundiced. The teeth were in poor condition; pyorrhea was present. The tonsils were slightly enlarged and the mucous membranes were pale. In the neck there were no palpable glands. The chest was well developed, with normal expansion. The apex beat was in the fifth interspace just inside the midclavicular line. All sounds were present without accentuation. A short systolic murmur was heard over the apex. The lungs were resonant throughout, and the breath sounds were normal. The liver and spleen were not palpable. The right rectus



Sickle cells in blood of Northern negro.

was rigid, with slight tenderness on pressure over the right iliac region. The extremities were equal and well developed. There was no edema. Reflexes were normal.

Laboratory Examinations.—The urine was clear, acid, with a specific gravity of 1.005 and negative for albumin, sugar, bile and diacetic acid. The stool was negative for blood, ova

* From the Department of Medicine, University of Nebraska College of Medicine.

and parasites. The gastric analysis showed free hydrochloric acid of 10 and total acidity of 60. The blood Wassermann reaction was negative by the Kolmer technic in three successive tests. Examination of the blood revealed: hemoglobin, 46 per cent. (Dare); red blood cells, 1,880,000; white blood cells, 8,400; neutrophils, 41 per cent.; eosinophils, 3 per cent.; mononuclears, 37 per cent.; transitionals, 9 per cent., and an abundance of nucleated red cells. The peculiar elongated and sickle shaped red cells were markedly present, as shown in the accompanying photomicrograph. The coagulation time of the blood was three minutes by the Howell method; hemolysis began at 0.28 per cent. and was complete at 0.20 per cent. sodium chlorid solution. The blood serum failed to hemolize cells from a normal blood, indicating absence of hemolytic substance. The serum was a decided yellow. In a sealed slide chamber, phagocytosis of the red cells by the leukocytes was observed.

We made a study of the blood of the patient's three daughters, according to Emmel, finding the blood normal in all three cases except in one, which showed a hemoglobin of 70 per cent. None showed the red cell changes under a sealed slide chamber.

During the eight weeks the patient was under our observation, frequent blood examinations were made showing no material change. The patient was given sodium cacodylate by hypodermic injections and put on Blaud's pills without varying the blood picture.

COMMENT

Sickle cell anemia has previously been reported only in Southern negroes.

AVULSION OF THE ANTERIOR SUPERIOR ILIAC SPINE, WITH SYMPTOMLESS SACRALIZATION OF THE FIFTH LUMBAR VERTEBRA

EDWARD P. HELLER, M.D., KANSAS CITY, MO.

This case illustrates a rather rare type of fracture, and incidentally shows a complicating spinal anomaly which has not produced symptoms and which is of some medicolegal interest.

REPORT OF CASE

E. W., a youth, aged 17 years and 8 months, employed as a yard messenger by a railroad company, was sent home from work, April 10, 1924, because of extreme pain in the region of the left groin. He was referred to me by Dr. W. D. Middleton, who thought from the severity of the pain manifested by the lad that he had ruptured a viscus.

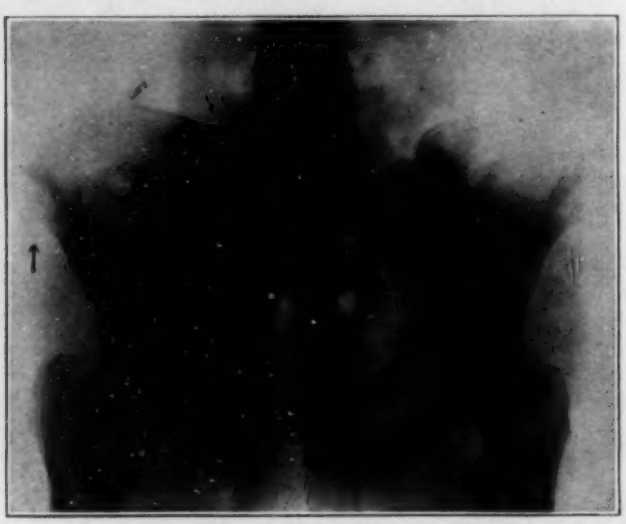


Fig. 1.—Avulsion of anterior superior iliac spine, which may be seen displaced downward and outward; sacralization of transverse process of fifth left lumbar vertebra, with failure of similar deformity on right side.

The youth was of athletic build, about 5 feet, 10 inches (178 cm.) tall, and lay on his back in bed with the head and chest slightly elevated on a pillow. He complained bitterly of pain in the left groin, but said he was fairly comfortable as long as he did not move. He stated that two weeks previous he had noticed a "catch" in this side while sparring with one of the men in the railroad yards. He had gone on with his work, however, with gradual subsidence of the pain. About an hour before I saw him, he had jumped down from a car without trouble, but in turning sharply from right to left to call a friend, with his foot fixed on the ground, he felt a "snap," and excruciating pain in the left groin.

Local examination showed a slight swelling of the tissues, which obliterated the normal prominence of the anterior superior spine of the ilium, on the left side. There was no evidence whatever of external violence. The region was so exquisitely tender that no crepitus could be elicited. He could not flex the left thigh on the abdomen. I asked him to cross the left leg over the right knee. This also he could not do. I then abducted the left thigh, and he at once complained bitterly of pain in the region of the left iliac spine. This confirmed my suspicion of avulsion, and in the absence of any other apparent pathologic condition, a roentgen-ray examination was made by Dr. E. H. Skinner. My only dressing was a broad adhesive strip extending from well around on the left buttock to the midline in front, crossing the spinous process at its center. This was quite a help to him in guarding his movements.

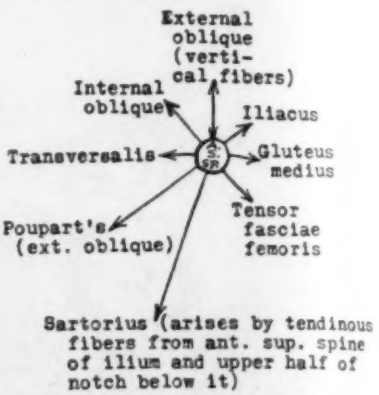

External oblique (vertical fibers)
Internal oblique
Iliacus
Transversalis
Gluteus medius
Tensor fasciae femoris
Poupart's (ext. oblique)
Sartorius (arises by tendinous fibers from ant. sup. spine of ilium and upper half of notch below it)

Fig. 2.—Direction of pull of muscles attached to left anterior superior iliac spine; lengths of arrows are purposely varied to represent relative stress exerted—long arrow, great stress; short arrow, minor stress.

The roentgen-ray examination revealed the fracture, with slight outward rotation of the fragment, and some downward displacement. There was also a sacralization of the fifth lumbar vertebra (Fig. 1).

The bearing which the lumbosacral anomaly has on the mechanism of this fracture would appear to be important. It would interfere with the rotation of the fifth lumbar vertebra on the pelvis, and might increase the leverage at the iliac spine when the sartorius is put on full stretch. Indeed, sudden contraction of the sartorius, as stressed by Corlette,[1] with an inflexible lumbosacral joint might account for this injury. In looking over the review of cases of this sort by Carp,[2] I was struck by the fact that in the roentgenogram of Dr. Mayer's patient, there would appear to be a sacralization of the fifth lumbar vertebra on the side of the fracture, much as in my case. The reproduction does not include much of the lumbar spine, and may be a faulty exposure; but if it is true that this sacralization does exist, there must be more than a coincidence in the association of the two conditions. (Neither Carp nor Mayer mentions the lumbosacral anomaly.)

This patient has followed no occupation that would account for unequal development or deformity of the vertebrae, nor has he been aware of its existence or suffered pain as a result of it. Von Lackum,[3] in his study, has shown that sacralization is rarely symmetrical. It has been shown by Goldthwaite and others that a lumbosacral anomaly of this sort is often responsible for much pain, and according to von Lackum, "the unequal growth and movement that results is not infrequently the cause of scoliosis." In view of this lad's occupation, therefore, the finding of the anomaly is of medicolegal interest, even though we cannot absolutely attach to it the blame for the avulsion, by muscular contraction, of the anterior superior iliac spine.

1. Corlette, C. E.: Australasian M. Gaz., March 15, 1895, p. 99 (cited by Carp).
2. Carp, Louis: Ann. Surg. 79: 551 (April) 1924.
3. Von Lackum, H. L.: Lumbosacral Region, J. A. M. A. 82: 1109 (April 5) 1924.

Finally, the case is of interest in that the age—17½ years is the average for the fracture—the vast majority occurring at this period, before firm bony union of the epiphysis and the body of the ilium takes place (between the nineteenth and the twenty-first years).

Figure 2 shows the directions of muscular pull and the great preponderance of the effect of the sartorius in the mechanism of the avulsion. It also gives a key to suitable treatment—that of immobilization of the fragment by means of broad adhesive strips applied so as to counteract the down-pull of the sartorius, gluteus medius, and tensor fasciae femoris. I removed the original dressing as soon as the diagnosis was confirmed, and carried a 3-inch strip of adhesive plaster from the left posterior superior iliac spine around to the midline in front, going below the fragment and exerting strong pressure upward over the sartorius attachment. A second strip was applied just above it, leaving an elliptic bare space just over the fragment. By the twentieth day, there was good callus, no tenderness, and fairly good function. On the thirtieth day, all support was removed, and the patient was able to go up and down stairs with slight difficulty, and could easily flex the left leg over the right knee.

707 Rialto Building.

HEREDITARY ANKYLOSIS OF THE PROXIMAL PHALANGEAL JOINTS

DAN COLLIER ELKIN, M.D., ATLANTA, GA.

In 1916, Cushing[1] described a condition of ankylosis of the phalangeal joints which he designated as symphalangism. The rarity of the lesion and the definite inheritance of the condition

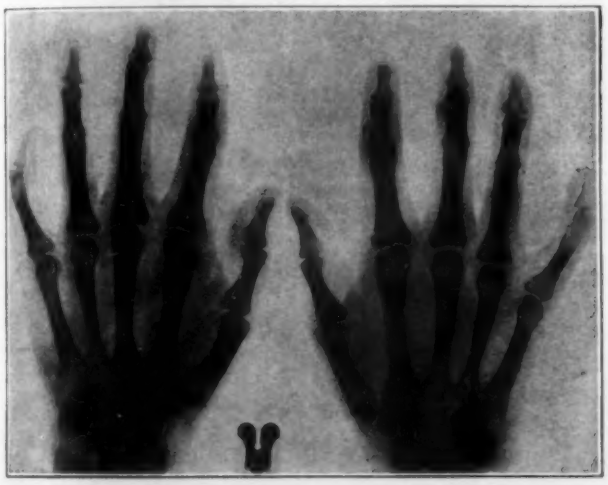


Fig. 1.—Fusion of proximal joints of the middle, ring and little fingers.

as a unit character in accordance with mendelian laws make it of peculiar interest.

Various developmental anomalies of fingers and toes occur frequently, and occasionally show familial tendencies. The more common types are polydactylism (accessory digits) and syndactylism (webbed fingers).

Cushing was able to secure data on 312 members of the same family through seven generations. He found that the trait was carried by approximately 25 per cent. of all individuals and by 50 per cent. of the children of an affected parent. These figures follow mendelian expectations for a single unit character. He likewise found that it was never transmitted by an unaffected parent, but with a 50 per cent. chance of transmission by an affected parent.

The case here presented shows the same trait as in Cushing's family, but so far as can be determined no relationship exists between the two.

As is seen by the photographs, the proximal phalanges of the middle, ring and little fingers of both hands are ankylosed. The index fingers and thumbs are normal. The subject, a man, aged 25, has not been incapacitated in carrying out his work as a manual laborer, although the pictures show his inability to flex his fingers completely.

The roentgenogram shows clearly the nature of the lesion. Except for some enlargement of the bones, there is no evi-

Fig. 2.—Anterior and palmar views, showing absence of proximal joints.

dence of a proximal joint in the middle, ring and little finger of either hand.

The etiology of the condition can only be a matter of speculation, since there is nothing in the embryologic or evolutionary development which would definitely account for it. Cushing believed that the late appearance of ossification centers in the proximal phalanges pointed to a late development in the proximal joints, "and that in these individuals an inhibitory influence checks their development."

The family record has been traced through five generations; but, owing to migration of individual members to many parts of the country, and the fact that no genealogical table has been kept, the record is exceedingly meager. It is known by the patient that the trait has been carried through five

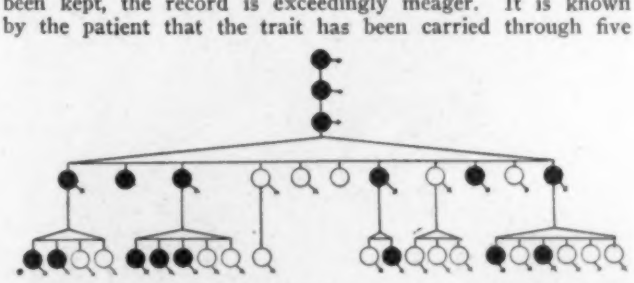


Fig. 3.—Genealogical table showing inheritance of trait through five generations.

generations; the first and second by male, the third and fourth by female ancestors. Men and women are equally affected, and both transmit the trait.

While the number here traced is too small to use as a basis, it is probable that the condition follows mendelian laws of inheritance.

24 Doctors' Building.

1. Cushing, Harvey: Genetics 1:90, 1916.

THE DUODENOGRAM: A NEW METHOD OF VISUALIZING THE ENTIRE DUODENAL CONTOUR *

JACOB BUCKSTEIN, M.D., NEW YORK
Consultant in Gastro-Enterology, U. S. Veterans' Bureau; Assistant Roentgenologist, Bellevue Hospital

Figure 1 represents an intestinal tube in situ, the end having reached just beyond the duodenojejunal junction. The distal 8 inches of this tube have been perforated by numerous small openings. A suspension of barium is injected through the proximal end. When this suspension reaches the distal end, it escapes through all of the numerous perforations at practically the same time, and fills the entire duodenum in an unobstructed, isolated and homogeneous manner (Fig. 2). This simple method obviates the necessity of employing any special apparatus or of producing unphysiologic distal obstruction, in filling the duodenal curve. The method is of value

Fig. 1.—Roentgenogram of intestinal tube: The end has reached the beginning of the jejunum; the last 8 inches have numerous small perforations, through which injected barium may escape in a simultaneous manner.

Fig. 3.—Duodenogram, obtained in a patient suspected of having a tumor of the head of the pancreas; the definite enlargement of the duodenal curve suggested the presence of such a tumor; this was verified on operation. (To be compared with Figure 4.)

Fig. 2.—Roentgenogram following the injection of barium through the proximal end of the tube: The barium, escaping through the distal perforations, fills the isolated entire duodenum.

Fig. 4.—Duodenogram, obtained in a patient suspected of having a tumor of the head of the pancreas; the lack of enlargement of the duodenal curve suggested the absence of such a tumor; this was verified on operation. (To be compared with Figure 3.)

* From the radiographic service of Dr. I. Seth Hirsch, Bellevue Hospital.

for a roentgen-ray study of the normal duodenal curve and of pathologic variations (Figs. 3 and 4).[1]

1 West Eighty-Fifth Street.

RETROPHARYNGEAL ABSCESS FROM LODGMENT OF FOREIGN BODY IN ESOPHAGUS

A NEW DIAGNOSTIC SIGN OF ESOPHAGEAL FOREIGN BODY *

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The occurrence of a retropharyngeal abscess as a complication of a foreign body in the esophagus is very rare. In the surgical consideration of retropharyngeal abscess in a number of standard works consulted, lodgment of an esophageal foreign body is not mentioned as an etiologic factor.

REPORT OF CASE

A woman, aged 65, who had had no previous difficulty in swallowing, had a sticking sensation in the pharynx while eating fish; she choked, gagged, and regurgitated a portion of the food she was attempting to swallow. The sticking sensation persisted and was localized in the left side of the neck at the level of the cricoid cartilage. She was unable to swallow solid or soft food, and liquids were swallowed only in small quantity and with great difficulty.

Dr. G. Mason Astley was called and examined the pharynx, larynx and hypopharynx by means of a mirror, and excluded the presence of a foreign body in these regions. The patient was then referred to the Bronchoscopic Clinic at the University of Pennsylvania Hospital for endoscopic examination. No attempts had been made at blind removal or pushing downward.

On admission, two days after the accident, the patient was in fair general condition, but was much overweight; her ankles were swollen and she had shortness of breath on exertion. The cardiovascular system was in fair condition. She complained of soreness in the left side of the neck at the level of the cricoid cartilage, which increased in severity on any attempt at swallowing. This tenderness on the left side was markedly elicited by pressing the cricoid cartilage toward the left side with the finger placed against the right side. She was able to swallow liquids. Examination of the mouth and pharynx with the mirror confirmed the opinion of Dr. Astley as to the absence of a foreign body. No swelling or emphysema of the neck was noted. The temperature was 99.2 F.

The roentgen-ray examination by Dr. H. K. Pancoast revealed no evidence of a foreign body. When the patient attempted to swallow a capsule containing bismuth, the capsule lodged in the upper esophagus, but was washed downward with the first subsequent swallow of water. It was a question whether or not the hesitation of the capsule was due to abrasion and inflammatory reaction with spasm, such as is noted frequently at the former site of lodgment after a foreign body had passed on downward.

Fig. 1.—Fish-bone found almost completely embedded in the posterior esophageal wall; its puncture resulted in the formation of a large retropharyngeal abscess.

The patient was kept under observation, and her nutrition was maintained by ample liquid diet. Dysphagia became more pronounced, and it was noted particularly that digital pressure from the right side of the neck against the larynx and trachea toward the left caused marked increase in tenderness and pain on the left side.

Esophagoscopy was done the second day after admission by lifting the larynx forward from behind the cricoid cartilage with the Jackson direct laryngoscope. Foul pus was thus released from the upper esophagus below the cricopharyngeal fold. This was removed with the aspirator, revealing a few millimeters of the end of a fish-bone projecting upward at the cricopharyngeal fold. The bone (Fig. 1) had perforated the left posterior lateral esophageal wall in a direction downward and outward. It was removed by grasping the free end and withdrawing it through the laryngoscope with Mathieu forceps. Pus was then aspirated from the esophagus and pharynx. The bone was found to measure 3 cm. in length. The removal required two minutes and forty-six seconds; no anesthesia, general or local, was used. As postoperative

Fig. 2.—Retropharyngeal abscess due to penetration of a fish-bone. The posterior pharyngeal wall is pushed forward, by the huge abscess, from its normal position, *N*, to the dotted line, *B*, causing extreme dyspnea by occluding the airway, as shown at *A*, *B*. The larynx and trachea were displaced forward 4 cm. by the huge pus collection back of the hypopharyngeal wall. The bone was removed and the abscess aspirated through the mouth by means of the esophageal speculum.

treatment, bismuth subnitrate was given dry on the tongue every four hours. An ice collar was applied to the neck, and cracked ice was given by mouth. The diet consisted of sterile liquids.

In the subsequent roentgen-ray examination, the bismuth capsule lodged and was dislodged with the first swallow of water, just as in the examination before the removal of the foreign body. The patient still swallowed with difficulty, though less, for the first forty-eight hours following the removal; then the dysphagia again increased. Though tenderness on the left side of the neck persisted, it was noted that pressure from the right side against the cricoid cartilage and trachea no longer elicited tenderness or caused any increase of pain after the removal of the foreign body.

Examination of the pharynx with the mirror showed some fulness of the posterior wall, displacing the larynx forward and slightly overhanging it. Dr. Pendergrass reported on roentgen-ray examination (Fig. 2) a rather large retropharyngeal swelling, which seemed to be encroaching on the larynx. Digital examination of the postpharyngeal wall confirmed this diagnosis of abscess.

The patient was placed in Jackson's position for the removal of a foreign body from the larynx (the foot of the table elevated, the head lowered, and the patient's head maintained in such a position that the cervical spine was on a line with the upper dorsal spine, to prevent aspiration of the pus into the lungs). The abscess was drained by incision through the direct laryngoscope, and the pus was aspirated from the

1. Buckstein, Jacob: The Contour of the Isolated Entire Duodenum, Am. J. Roentgenol. **11**: 293 (March) 1924; A New Aid in the Diagnosis of Tumor of the Head of the Pancreas, Surg., Gynec. & Obst. **39**: 509 (Oct.) 1924.

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abscess cavity and the pharynx with the suction apparatus. The patient swallowed readily after the evacuation of the abscess. The opening was maintained until the abscess was completely drained, and the patient was discharged, well.

COMMENT

The points of interest in the case are:

1. Retropharyngeal abscess from trauma and infection by the perforation of the upper esophageal wall by a sharp, slender foreign body.

2. A new sign of foreign body in the cervical esophagus, which assisted us to make a diagnosis in a case of a nonradiopaque foreign body. This sign, which I often have found useful, is elicited as follows: Moving the trachea or the larynx toward the point of localized tenderness, as indicated by the patient, by pressure from the opposite side of the neck, causes a marked increase in tenderness and pain at this point while the foreign body is present. If the foreign body has passed on or has been removed, there will be little or no change in tenderness by pressure from the opposite side. This sign of a foreign body in the cervical esophagus, the place of lodgment of the great majority of esophageal foreign bodies, I have found positive in observation of a large number of cases during a period of five years at the Bronchoscopic Clinic. It has not, to my knowledge, been described, and is offered as a new sign for the determination of a foreign body in the esophagus. It is particularly useful in cases of fish-bone, splinters of wood and similar foreign bodies, that are not only nonradiopaque, but which, being slender, permit a capsule to pass by either with or without the assistance of a swallow or two of water.

GRANULOMA INGUINALE AND SYPHILIS

REPORT OF A CASE EXHIBITING BOTH INFECTIONS

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In a recent article by Schochet[1] of Chicago, a tabulation of the fifty-nine cases of granuloma inguinale reported in the United States during the last three years showed that fifty-four cases occurred in negroes, and of the remaining five cases only two were in white males. This article also stated that it was not definitely known whether granuloma inguinale and syphilis could exist as a double infection. In view of the rarity of granuloma inguinale in white males and also because of a coexistent syphilis, this case is reported.

REPORT OF CASE

J. T. W., a white man, aged 43, married twelve years and the father of six healthy children, the youngest 2 months of age, referred to me, June 29, 1924, had had extramarital sexual exposure about four months previously. It was later learned that the woman had at one time lived in South America. Eight days after exposure, a small nodule developed on the dorsum of the penis, just above the corona. Two days later the nodule ulcerated slightly, and the patient consulted a physician, who made a diagnosis of chancroid and cauterized the lesion. After about three weeks' treatment with various local antiseptics there was no apparent improvement. The diagnosis was then changed to syphilis, and antisyphilitic treatment was instituted. This was continued until my first observation of the case, the patient having received nine injections of some arsphenamin preparation. There had been no secondary symptoms, and the local lesion had slowly and progressively become worse. On examination, a fiery red, elevated ulceration, slightly smaller than a silver dollar, and oval, was seen on the dorsum of the penis, extending back 5 cm. from the corona. The patient complained of intense itching and burning. The inguinal glands were palpable, but not markedly enlarged, as would be expected with such an extensive ulceration. The blood Wassermann, dark field and general physical examinations were negative.

Butesin picrate ointment was applied locally, and gave almost instant relief from the intense itching and burning. A tentative diagnosis of granuloma inguinale was made, and, July 3, 4 c.c. of a 1 per cent. solution of antimony and potassium tartrate was given intravenously. Forty-eight hours later the ulcer showed definite improvement, and healing had begun around the margins. July 13, after five injections of the antimony solution, ranging in amount from 5 to 7 c.c., the vivid red had almost disappeared and the ulcer was well covered with healthy granulation tissue. On this date, however, a definite macular rash appeared over the patient's chest and forehead, and another Wassermann test was requested. The patient also complained of a sore throat. Two days later the Wassermann reaction was reported three plus, and the rash was more distinct. Neo-arsphenamin, 0.9 gm., was given and the antimony discontinued. The following day 2 grains (0.13 gm.) of bismuth salicylate was given intramuscularly. At this time it was noticed that while the rash was fading rapidly, and the sore throat was much better, the lesion on the penis had again become fiery red and had almost the same appearance as at the beginning of treatment. The next day the ulceration was even worse, and it was decided to discontinue all antisyphilitic treatment and again use the antimony solution. Accordingly, four more injections of antimony solution (7 c.c. each) were given intravenously, with the result that on July 26 the ulcer was entirely healed without a scar.

Appearance of lesion at examination, July 3.

Three more injections of antimony have been given since this time to guard against a possible recurrence, and antisyphilitic treatment has been reinstituted. The patient has gained 15 pounds (7 kg.) and is apparently in good health. There has been no evidence of any recurrence of the local lesion.

COMMENT

The diagnosis of granuloma inguinale was based on: the history of the case; the fact that the ulcer had not improved under four months' antisyphilitic treatment; the appearance of the lesion; the immediate improvement under antimony therapy, and the reactivation of the granuloma when antimony was discontinued.

The diagnosis of syphilis was made, secondarily, on the appearance of the rash and sore throat, the three plus Wassermann reaction and the disappearance of all three under antisyphilitic treatment.

CONCLUSIONS

1. Granuloma inguinale and syphilis may be concurrent infections in the same patient.
2. Both may be treated specifically.
3. The two may be acquired simultaneously.

34 Doctors Building.

1. Schochet, S. S.: Surg., Gynec. & Obst. **38**:759 (June) 1924.

Prevention of Disease.—Credit for the advances that have been made in prevention of disease and prolongation of life cannot be claimed solely by any single agency or by any half dozen agencies. The medical officer of health has played a large part in the work. He has often been not merely the instrument, but the initiator of progress, and as (commonly) a whole-time official he has been the administrator to carry out policy determined in large measure by his advice.—McVail, J. C.: *Proc. Roy. Soc. Med.* **18**:5 (Dec.) 1924.

Special Article

MEDICAL EDUCATION AND MEDICAL SERVICE

IV. THE REAL REMEDY: REDUCTION IN THE EXPENSIVENESS OF MEDICAL TRAINING

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(Continued from page 441)

The suggestions we are offering furnish no direct solution of the difficulties. Yet consideration of the situation leaves no doubt that if the problem is to be left to us it must be met directly. And the only way we can do that will be by the adoption of a system of medical education which will act to relieve the situation in accordance with economic law; which will not be so expensive that it will only produce graduates who are above the ordinary world's work; and which will not be beyond the opportunity of men who, at the price they have paid for their profession, will be willing to meet the ordinary demands of medical service. Will such a course meet the situation and is such a policy in medical education practicable?

No one would go back to the irresponsible condition of medical education thirty years ago. Fortunately, it is not necessary; for that condition produced more physicians than were needed anywhere. Our experience in the distribution of physicians up to ten years ago indicates that on a high school entrance requirement and four years of medical preparation, enough physicians will go to the country to meet the needs adequately. My study of one school of Chicago and Gordon Wilson's study of the schools of Baltimore also show this. A four year requirement will not send back as many as a two or a three year requirement, but it will probably send back two and a half or three times as many as an additional two years of college requirement and from six to eight times as many as the Johns Hopkins requirement. And that is enough.

I have suggested such a minimum curriculum of four or four and a half years, one unconditionally to be a hospital internship or other form of good apprenticeship, for several reasons, among them especially the following:

1. Four years is the time requirement of preliminary culture for intellectual careers that custom has long maintained.

2. That standard would not leave us at a disadvantage in competing for young men with all the other intellectual callings, practically none of which exact as a minimum requirement more than four years after leaving high school.

3. Under it, experience has shown, a thoroughly competent preliminary education for entering the medical profession can be given.

The fact is not to be lightly neglected that society for a long time has set four years, after elementary education, as the period to be devoted to preliminary culture for the higher careers. It is not because a student cannot be more highly trained in seven years or ten years or a lifetime than in four; the tradition is based on many social, economic, pedagogic and other considerations; and the highly significant fact remains that, as a result of all these, the four year standard remains. Many teachers imbued with the importance of their fields, and sometimes overestimating their relative importance, would raise this minimum requirement, just as we medical teachers have been and are clamoring for still higher minimum requirements in medicine. Mr. Abraham Flexner, fourteen years ago, in answer to the objection that we were raising our requirements above that of other callings, pointed out that engineering teachers felt the need for increasing above four years the requirement in engineering. Fourteen years have passed and we have doubled ours, while in engineering the requirement remains the same.

As I have pointed out, this universal situation as regards preliminary requirements in other higher callings puts an enormous burden on us in bidding for young men in competition with them. This competition comes at the time when financial pressure is hardest; it turns away from medicine great numbers of young men of the most eligible sort for medicine—young men who will not remain nonsupporting burdens on their parents longer than any one else; who want to see themselves independent members of society, doing its work and founding families at least at the same time of life as their colleagues in other intellectual callings; young men who, because they are poor, have a sober sense of responsibility, whose training has not made them so exacting of the supposed luxuries and who would be glad to accept the rewards of a medical career of ordinary workaday service. It is these men we are cutting off from medicine.

In the old days when three or four years, including a hospital service, would get a medical education, many men bridged this gap of three or four nonproductive years by some preliminary occupation in which they saved the $1,500 or $3,000 for their education. Many of our best men have thus come in through teaching. Then the young men who graduated from high school and went into business, and after several years found that their ambition was medicine, could often meet these conditions; and these men gave us a very useful element in the profession. They were ambitious, they came into medicine with a mature purpose, they had already had some independent experience of life, a lack of which is one of the great objections to keeping young men in pupilage continuously until they are 25 years old or more. Now these young men are all cut out. The gap is too wide for them. First, to earn the required $8,000 or $10,000—if it can be earned at all—and then to give seven years more to medical education is too long. These men go instead into other callings.

A digression may be allowed here to consider one point that is concerned with this group of men. When the point is made that it is pedagogically unsound to keep men in pupilage until they are 25 or 26 years old, the counter reply is made that men beginning to practice medicine should be older than in other professions.[25] I do not believe the point is well taken, but I call attention to the fact that experience shows that under present conditions men are graduating practically at the same age as formerly. "The average age of students graduating in the class of 1922 was 26.8 years. In 1916 the average age was 26.5. It is evident, therefore, that the increase in the average age of students on graduation since the adoption of higher entrance requirements has only been a fraction (three tenths) of a year."[26] This cannot mean that seven

plus nineteen is not more than four plus nineteen. The explanation lies in the fact that the men who can study medicine now are those who can afford to stay in school from the kindergarten until they graduate in medicine, while in the older days we got so many virile, independent men, who had been out of leading strings long enough to earn their independent way, that they increased the average time of graduation two or three years or up to what it is now.

Medicine is now, indeed, a career limited to the unusually prosperous. The secretary [40] of the Council on Medical Education and Hospitals has tried to refute that fact, but a thoughtful reading of his article will convince one that even on his own showing he has failed to do so. If his contention were correct, it would be a strong argument for reducing the medical course, for if there is enough time at the disposal of the student to earn his living while properly pursuing his medical education, there is at least a third of the time of the course that is wasted for the all-time student.

Dr. Walter L. Niles,[41] dean of Cornell University Medical College, has carefully considered this question, and frankly concludes, as an unbiased consideration of the subject must conclude, that there is no place now for the poor boy in medical education.

I am not interested, in this connection, in poor boys as such. From a considerable acquaintance with them and their richer brothers as well, I am sure their mental and moral endowments average the same. They are in these respects no better than the rich boys, but they are also no worse. And, as Lincoln said, there are so many of them. They are certainly ten times as common, and when you exclude them from medicine on material grounds you exclude at least nine tenths of the best material that we have.

If the poor boy, who is used to the simple life and to effort rewarded only by the simpler luxuries, cannot enter medicine, who is going to do the ordinary work of medicine in the city or the work in the country? The man who can live without productive labor until he is from 25 to 30 years old, who can spend $8,000 or $10,000 on his higher education, is not looking for an ordinary practice among ordinary people in the cities or for any practice in the country. The careers of the Johns Hopkins alumni illustrate this.

THE FOUR YEAR COURSE

I outlined in my address the terms under which I believe an adequate medical education can be given that would largely meet our necessities. For a brief discussion of these terms I must refer to that address. They were essentially a high school education and four years of medical study—twenty-seven months of collegiate instruction and eighteen of practical apprenticeship, preferably in a hospital; this to be the minimum course that carried an unrestricted license to practice medicine. Additional provisions of as exacting character as practicable were suggested for the intensive training of those who sought preferred careers. Such a minimum course as I suggest, with a year and a half of apprenticeship, is not to be compared, as has been done, with any sort of curtailment of the medical course that proposes to leave this out or to give anything less than a well rounded collegiate course. Dr. Gordon Wilson,[42] professor of the principles of medicine, University of Maryland School of Medicine, I find recently, has offered the same plan better worked out.

Under such a plan intelligently and soundly administered, I have no hesitation in insisting that a good medical education can be given and competent physicians produced. And the reason I am willing to insist that competent physicians can be produced with this sort of training is that *we have been highly successful in doing it in the past.* That is the only argument I feel will have any weight in the present reluctant attitude of mind in which medical educators stand.

We have long experience to prove that, when suitable young men have had, after their medical course, a hospital apprenticeship such as I suggest, they have almost without exception made competent and useful medical practitioners. Men of the sort of training that I advocate, often with very much less preliminary academic and medical training, have led in this country, not only in furnishing practical medical service of the highest skill in the community, but in the advancement of medicine as a science and as an art. Scores of men with not so good a foundation for their careers are today leaders in scientific and practical medicine. Such men are outstanding figures in every part of the country. They are not simply good crude practitioners; they are practitioners of the highest accomplishments and skill; they are distinguished teachers, writers and scientists. The most select special societies, even those devoted to purely scientific parts of medicine, have many of these men. They have been their presidents in great numbers. I presume that one could find as an illustration no more select list of the physicians of the country than the members of the Association of American Physicians and of the American Surgical Association, who are also in "Who's Who." Among the members of these two associations who are signaled out for distinction by "Who's Who" are a very large number of these men. A very considerable number of them did not exceed or even equal in their preliminary training what I am advocating here. Among such men have been many presidents and other officers of the American Congress of Physicians and Surgeons and of the American Medical Association down to the present day. The three men in the United States who would, I believe, be picked out as probably the most distinguished exponents today in their respective fields of medicine, surgery and pathology began their careers on a preliminary training not as good as that I propose. Let any reader of this paper canvass the useful and representative members of the profession within his acquaintance and see how many of them have had no better preliminary training than I suggest.

These men do not belong to the past; they are in their activities now, and they have built their careers on a foundation not as good as I advocate. To maintain, in the face of such a situation, that modern medicine cannot be practiced on such a basic education as these men had or with less preliminary training than we have set our hearts on is to ignore conclusive experience.

The answer will be made that these men have not rested on their preliminary training. Of course, they have not; nor will suitable men at any time. The point that I am after, and that these facts establish, is that an academic medical education below what I

40. Colwell, N. P.: Can the Poor Boy Secure a Medical Education? J. A. M. A. **81**: 577 (Aug. 18) 1923.
41. Niles, W. L.: Proc. A. Am. M. Coll., 1924, p. 62.
42. Wilson, Gordon: Medical Education with Reference to Rural Communities, J. A. M. A. **66**: 1073 (April 8) 1916.

would make the minimum has proved an adequate foundation for building the careers of most competent physicians of the present day. The answer will also be made that experience of this sort proves little, because leaders are exceptional men. Leaders are, of course, always in a sense exceptional men. But this experience has not been confined to exceptional men; the experience is almost universal in this country that the men of intelligence and character who have a good hospital training become useful and successful physicians.

American medicine has made a good record in the past, and in the present as well, under conditions of training that are not as good as those which I have outlined. In that experience, the one outstanding fact is the necessity in medical training of an apprenticeship, best under a master. American physicians so trained have in fact shown a competence in practice that will bear easy comparison with that of men trained under the European standards, which it is our ambition to follow. Indeed, I am constrained to believe that the men we are producing under our highest medical requirements have not proved more useful practitioners or more resourceful ones than those we have produced under conditions of the sort that I suggest. These higher medical schools produce meticulous practitioners, but practitioners who are apt to need an exacting environment for their satisfactory functioning. For achievements in clinical medicine, for usefulness both in the practice and in the progress of medicine I would be willing to compare man for man with the graduates of any of these higher schools, no matter how careful and exacting the school is in the selection of its matriculants, the graduates of the great public hospitals of the country, such as the Cook County Hospital of Chicago, whose academic training has not been so so refined, but whose enthusiasm has been stimulated and whose skill has been sharpened and made resourceful by their experience in these practical schools of medical training. The comments of Sir James Mackenzie in his "Future of Medicine" are thought provoking in this connection.

In the experience that we had had for many years in the past and up to the present with men trained under conditions that approximate but are not as good as I propose lies the proof that such a program as I have indicated will produce, as it has in the past, competent practitioners. In the face of such proof can we, for the sake of our academic ideals, rest content to invite medical socialism, or turn over the care in sickness and injury of a large part of our people to untrained incompetents, or leave rural communities "medically helpless"? Is such a course compatible with the highest discharge of our obligations to society?

An education that takes one through an accredited high school does not leave its students unequal to taking up the study of medicine. It is sufficient to begin any other form of higher education, and it has hitherto been sufficient for medicine. It includes three or four years of English, history and the languages, including Latin; four years of mathematics, including algebra, plane and solid geometry and elementary trigonometry; a year or more of political economy and ethics, physics, chemistry, astronomy and the biologic sciences. High schools do not all give these things equally well, nor do any other schools equal one another entirely. But a high school education for an intelligent, proper young man is no insignificant training. As Dr. George Blumer, formerly dean of the Yale Medical School, has said to me:

> When I came to New Haven less than twenty years ago, the Yale Medical School admitted men from high school, and so far as I could observe they were just as good students as the men we obtained after our requirements were raised. I am of the opinion that, provided the high school training includes elementary chemistry, biology and physics, it is perfectly possible for a high school graduate to study medicine intelligently.

As a matter of fact, we are insisting on the premedical collegiate years, not so much in order to increase the general education of our students but in order to push back into this course parts of the medical curriculum. We are not actually increasing the preliminary general culture of our students, but increasing the length of their medical education. There is no limit, indeed, to our appetite in this direction. In order to get our students earlier and hold them longer, we are for the condensation of grammar and high school education, for the "speeding up of the grammar and high schools" [29] — which I believe could probably be done to advantage. We are entirely willing to disrupt the student's academic training by making it a premedical course and not a course in general culture. In fact, our attitude with regard to the whole of the rest of education is a good deal like that of Josh Billings, who was willing to sacrifice all of his wife's relations on the altar of his country.

We are not resting content with our present requirements. At least five schools have now adopted a college degree as a preliminary requirement—which is all right for five schools—and many more are making it difficult to get in without such a degree. And we are suggesting that "the time has come to consider seriously whether the so-called two years premedical course is producing students properly prepared to study medicine." [43] And then, to get more room in the medical course, the tendency is strong to put as much as possible into a postgraduate course.

The trouble is that in this movement in medical education—and it is a danger in every similar movement—our interest has become engrossed in the thing itself and we are failing to give due consideration to its purpose. The perfection of the instrument rather than its usefulness occupies attention. And so we go on elaborating medical education and demanding more and more for it in order to meet our ideals, regardless of the fact that its product does not fulfil practical needs. And then, as always under such conditions, we seek to justify our course on the ground of necessity—that a proper article cannot be produced at less expense. It is a good deal like the position of your architect who insists that the only proper house for you is one you cannot afford either to build or to live in. Medical education itself is the object of our academic zeal; if our plans for it are impracticable in an ordinary world, so much the worse for the world.

I am willing to leave the planning of medical education to educators—some of them experts in the philosophy of education in general—but I assert that they must justify their responsibility by drawing plans for a product that will meet practical needs. They are not alone entitled to decide this point; indeed, from their natural pride in their work, they are not unbiased or the safest judges of the results.

(To be continued)

43. Pepper, William: Higher Medical Education: The True Interest of the Public and of the Profession, abstr. J. A. M. A. **76**: 869 (March 26) 1921.

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SATURDAY, FEBRUARY 14, 1925

THE MØLLGAARD METHOD IN TUBERCULOSIS

In the recently published book[1] on the new gold treatment of tuberculosis, the experimental foundation of the "Sanocrysin" treatment of tuberculosis by Holger Møllgaard occupies 156 pages, and the preliminary results of the "Sanocrysin" treatment of human tuberculosis, edited by Knud Secher, 261 pages. Previous work on the treatment of tuberculosis with compounds of heavy metals and particularly with gold salts is reviewed, but no mention whatever is made of any of the American work in this field, either clinical or experimental.[2] It may be recalled that DeWitt and Sherman were not able to influence the course of tuberculosis in guinea-pigs by the administration of gold, although it was administered to them in such quantities that the amount of gold found in the organs after death was many times the amount necessary to kill tubercle bacilli in the test tube. The properties of "Sanocrysin," which is stated to be $Au(S_2O_3)\ Na_3$,[3] originally obtained by Fordos and Gelis in 1845, and its effects on the bovine tubercle bacillus are carefully described. The advantages claimed for "Sanocrysin" over other gold preparations are that it is soluble in water, readily diffusible, and slowly decomposed in the body without giving rise directly to poisonous substances. It has the power to prevent the growth in cultures of bovine tubercle bacilli, the lipoid membranes of which are penetrated to some extent by the metal ions. Guinea-pigs were injected subcutaneously with bovine tubercle bacilli, and immediately afterward 0.01 or 0.02 gm. of the preparation was injected in the same area; the injections were repeated three or four times. In the one experiment of this kind detailed in the book, the five animals injected with the drug were practically free from tuberculosis when killed on the thirteenth to the twenty-fifth day, while the five control animals when killed at about the same time showed generalized tuberculosis. The results of this experiment are interpreted to indicate that the remedy can act directly on tubercle bacilli in the living body. The question arises why similar experiments were not made with tubercle bacilli of the human type. No experiment of this general nature is reported in which the animals were allowed to live for a longer time. It is concluded, from the results of the injection of the drug into normal animals, that the intravenous injection of from 0.01 to 0.02 gm. for each kilogram of body weight has no harmful effect. This quantity is, generally speaking, the dose used in the therapeutic tests.

The results of the study of the influence of sodium aurothiosulphate on tuberculous animals, principally calves injected with tubercle bacilli, indicate that in tuberculous animals the injection, like that of other gold salts, is followed promptly by a severe reaction, which in the case of "Sanocrysin" is associated with marked parenchymatous changes in the kidneys and myocardium, edema of the lungs, and fall of temperature as well as other serious disturbances. In animals that have recovered from tuberculous infection, no such reactions follow the injection of the therapeutic dose of the drug. The reaction described is spoken of as "tuberculin shock," and it may be fatal, in which case marked congestion is present about all tuberculous areas. Møllgaard found, further, that the reaction to the drug in tuberculous animals can be prevented by the injection of serum from healthy calves previously injected with killed tubercle bacilli and tuberculin. This serum is regarded as an antitoxic serum that neutralizes toxins liberated in the tuberculous animal by the action of the drug. On the basis of these results, tests were made of the effect of "Sanocrysin" and serum in calves injected intravenously with bovine tubercle bacilli. Usually the treatment, i. e., the intravenous injection of the drug, was begun in two or three weeks after the injection of the bacilli, and it was found possible "to save the life of animals affected by even very grave miliary tuberculosis or tuberculous pneumonia and to render them in condition of clinical healing"; but it is only exceptional results that appear to warrant this statement. It is true that there was far less tuberculosis in the treated than in the control animals; but the experiments fall into so many small subgroups, each with only one control, that doubt inevitably arises as to the true significance of the outcome, especially as in some cases the treated animals were killed after a time, while in others they died spontaneously. Two apparently tuberculous monkeys were "cured" by "Sanocrysin"-serum treatment, but the skeptical reader will find himself in doubt as to the true nature of the clinical condition of these monkeys. The experiments

1. Møllgaard, Holger, in collaboration with Bie, V.; Chievitz, O.; Gravesen, J.; Fermin, G. E.; Secher, K.; Strandgaard, and Würtzen, C. H.: Chemotherapy of Tuberculosis: Experimental Foundation and Preliminary Clinical Results, Copenhagen, Arnold Busck, 1924.

2. Wells, H. G.; De Witt, Lydia; and Long, E. R.: Chemotherapy of Tuberculosis, Baltimore, Williams & Wilkins, 1924.

3. It has been suggested that the formula for sodium aurothiosulphate (sodium gold thiosulphate) is more properly expressed $Au_2S_2O_3.3Na_2S_2O_3$ or $Na_3Au(S_2O_3)_2$.

on tuberculosis of the eye "have not been carried to a definite conclusion." This, in brief, is the foundation on which rests the "Sanocrysin" treatment of tuberculosis. The curative experiments practically are limited to calves injected with bovine tubercle bacilli; nothing is said about the effect of the drug and serum on guinea-pigs or other animals infected with tubercle bacilli of human origin, and no mention is made of any effort to treat spontaneous tuberculosis of cattle with the remedy.

The clinical investigators, Secher and Würtzen, discuss the actions and the dosage of "Sanocrysin" in tuberculous patients. Curiously, they use distilled water as a solvent, while Møllgaard himself warns against its use and recommends freshly sterilized water because he regards it as safer. The tuberculin-like reaction following the injection of the drug in tuberculous patients is described fully. This may be most serious; numerous deaths have resulted, and clear-cut indications and rational dosage for the antiserum have not been established. Careful consideration of the results recorded of the "Sanocrysin" treatment by the Danish clinicians in the remaining chapters reveals that it is of no value in miliary tuberculosis or in tuberculous leptomeningitis, and that in advanced and serious cases of pulmonary tuberculosis the treatment is perilous and offers "only a slight chance of recovery." Furthermore, in surgical tuberculosis, intravenous injection "has given no satisfactory results." "In applying the proposed doses of Sanocrysin," says Secher in the final statement of the indications for the treatment, "combined with the specific serum we are able to carry through treatment in all initial cases without exposing the patients to danger." Now it remains to be determined whether any better results can be obtained by the help of a safe "Sanocrysin"-serum treatment than without it.

No fault may be found with the manner in which the clinical results are presented by the Danish investigators; there is no uncritical advocacy, and it is acknowledged freely that further experiments are necessary to determine the value of this remedy (if it has any) in certain forms of tuberculosis. There does not appear to be any reason for imagining that the particular gold salt which Møllgaard used can have any different effect from the other gold salts which have been investigated so extensively. The local and constitutional effects described are produced by all these salts, and are well recognized phenomena among investigators of tuberculosis. The idea that the serious toxic properties attributed to the liberation of products of the bacillus can be controlled by the use of a serum is highly improbable in the first place, and in all likelihood much or most of the intoxication is produced by the drug. It is more than twelve years since Spiess and Feldt began publishing on the use of gold cantharidinate and derivatives, and investigators have become very familiar with the effect of gold salts in tuberculosis. The local effects on the lesions are reported as quite similar to those produced by tuberculin and the new remedy may have whatever benefits tuberculin has, but is probably not nearly so safe a therapeutic agent. At present there is no justification for rushing into the treatment of tuberculosis with this drug; it seems to have no value in generalized and severe forms of the disease, while the usefulness it may have in other forms is at present a problem that can be left safely to Danish and other experts for a practical solution.

DIET IN NORTH CHINA

The newer knowledge of nutrition, with its indications of the outstanding concentration of certain essentials of the diet in a few characteristic foods, has aroused considerable skepticism as to the adequacy of the dietary among occasional groups of persons or races that depart widely from the types of rations that have been adopted in the communities where scientific and physiologic studies are being conducted. We have become accustomed to emphasize the desirability of milk and dairy products to supply the indispensable element calcium, for example. How about those parts of the world in which milk is a luxury, if, indeed, it is available at all? Concern about the regimen in some of the less advanced countries has been accentuated by the discovery of diseases there that are now definitely recognized as due to dietary deficiencies. Beriberi affords the conspicuous illustration.

Have we not been somewhat deluded by a few such instances of evident inappropriateness in national diet? Of course no one will gainsay that food shortage or famine is likely to be attended by serious disorders. On the other hand, it is scarcely believable that great groups, such as the Chinese, the Japanese or the inhabitants of Indian provinces, exist continually under serious dietary handicaps, when the survival of such vigorous races is contemplated. A recent writer [1] has mentioned the general impression that the Chinese people, after several thousand years of experience, have automatically and by blind experimentation reached the dietary level at which the maximal nutrition is purchased for the minimal expenditure. From this standpoint, unusual interest attaches to his investigations of the food consumed in the homes of the middle class of North China during the summer season. The estimated fuel value, through what was at best a crude approximation, was about 2,500 calories for each adult daily for persons of the comparatively small average stature of 55 kg. (121 pounds). Six sevenths of the intake is furnished by cereals, among which wheat predominates in North China.

1. Adolph, W. H.: A Study of North China Dietaries, J. Home Economics **17**: 1 (Jan.) 1925.

An average family during a period of one month consumed between twenty and thirty different articles of food, exclusive of tea, salt, vinegar and similar food accessories. Milk is scarcely ever used, and meat does not enter in large amounts. Nevertheless, more than 75 gm. of protein per capita is included in the estimates; and there are indications that the variety of foodstuffs in the diet is sufficient in normal times to provide an adequate supply of vitamins. Since the cereals used—wheat, millet and kaoliang—furnish more protein than does rice, and since the protein of soy beans is both abundant and adequate, these diets may be equally adequate as regards protein, though they include less of animal protein than other oriental diets in which rice is the only cereal. We, in America, are not accustomed to soy beans, millet and kaoliang, to mention only a few of the North China products. We are not wont to consume an equally bulky diet of which the alimentary utilization is doubtless not so complete as in the case of the occidental food supplies. But the maintenance of health and vigor on diets widely different from our own should warn us against extreme deductions—particularly when advice is proffered to long surviving races.

THE SWEAT GLANDS

In discussing the functions of the skin, many popular treatises on physiology and hygiene, including even those of comparatively recent date, tend to stress the protective feature and the excretory activities of the integument as the foremost items worthy of emphasis. It is true that a profuse output of perspiration carries with it a small content of inorganic salts along with a variety of organic components, some of which are ordinarily found in the urine as well as in the blood. It seems desirable, however, to give renewed prominence to the well established conviction that although the sweat may simulate the urine qualitatively, the amount of metabolic waste products or so-called catabolites in the fluid is comparatively slight. As recent writers have pointed out, the sudoriparous glands are not responsive to chemical changes in the blood, as are the kidneys; they are unable to excrete waste products in concentration; in fact, sweat is a fairly uniform secretion in which concentration of chemical substances is low. As Adolph remarks, the kidneys are concerned with the conservation of water, while the sweat glands are concerned with the production of a copious, dilute fluid that evaporates readily. These facts have a bearing on the supposed eliminative value of sweat-producing therapeutic procedures in certain types of disease. As Plaggemeyer and Marshall [1] pointed out ten years ago, the various substances that are producing toxemia in a given case may be among those which the kidney can concentrate, while in the sweat they are found in less concentrated form than in the blood stream. In the former case, sweating would not be indicated; hence certain reservations should be made on the efficacy of such procedures as a routine method of treatment. The skin should no longer be looked on as an excretory or even a "respiratory" organ, but primarily as a structure fundamentally concerned with heat regulation.

The loss of heat through the skin may proceed in part by radiation and conduction. Evaporation at once enhances the effectiveness of the cutaneous heat-eliminating devices. Under ordinary conditions the sweat glands do not function, but there is a passage of water from the blood through the comparatively thin epidermis. When sweating appears, however, as happens after the heat of the body is considerably increased, there is an active instead of a passive transfer of fluid from the interior to the exterior of the body, and heat is thereby far more readily removed in the consequent enhanced evaporation.

This rôle of the sweat glands is well shown in the study of the comparatively rare cases of ectodermal defects in which there is a congenital absence of the perspiration-producing structures. A new instance has recently been described by MacKee and Andrews [2] of New York. An investigation of the person in the calorimeter showed that of the heat output the normal proportion of about 25 per cent. was given off in the form of water vapor. Of this water, only one third was thrown off by the lungs. The remainder was excreted by the skin. At rest, therefore, at ordinary room temperature, his metabolism for heat and for water was indistinguishable from that of a normal person. When, however, the patient exercised, or when he was exposed to hot dry air, elimination of water was not increased to the normal amount. As a result, there was a pronounced elevation of temperature, which is not seen in normal persons under similar conditions. When exposed to hot, dry air, the patient's temperature could be prevented from exceeding 100 F. for two hours by constantly sprinkling his skin with cool water, whereas it would rise to 101 F. in twenty-nine minutes without such treatment.

This is typical of the congenital absence of sweat glands. The outcome demonstrates anew, however, that life is possible without the sweat glands. Only when the persons are no longer able to dissipate heat through other physiologic resources do untoward symptoms come into evidence. The studies of MacKee and Andrews show that the skin, even without sweat glands, eliminates enough water to fulfil the requirements of the individual when at rest under ordinary environmental conditions. As they express it, the sweat glands constitute an emergency apparatus, which is called on to regulate the body heat only under the stress of exercise, hot weather, and the like. One

1. Plaggemeyer, H. W., and Marshall, E. K., Jr.: A Comparison of the Excretory Power of the Skin with That of the Kidney Through a Study of Human Sweat, Arch. Int. Med. **13**: 159 (Jan.) 1914.

2. MacKee, G. M., and Andrews, G. C.: Congenital Ectodermal Defect, Arch. Dermat. & Syph. **10**: 673 (Dec.) 1924.

gains the conviction that insensible perspiration that finds its way through the skin as a membrane is, to quote the New York dermatologists, not a secretion from the coil glands; that sweat is a secretion from the sudoriparous glands; that insensible perspiration is a necessity; that sensible perspiration is an important emergency secretion, and that the principal function of perspiration is to regulate the body heat.

Current Comment

ENGLAND AND THE E. R. A.

Two or three weeks ago, January 17 and 18, to be exact, newspapers over the country carried a story with a London date line to the effect that British scientists had investigated the "Electronic Reactions of Abrams" and reached the conclusion that there was something to Abrams' theories and practices. In view of the fact that no data were available other than what appeared in the newspapers, THE JOURNAL made no comment at the time. There has now come to hand the *British Medical Journal* for January 24, containing a very full report of the matter, from which one is able to get a fairly clear idea of what the British committee said and did. First, it appears that the work was not done with or on an Abrams machine at all. The device used by the committee across the water was a piece of apparatus designed by a Dr. E. W. Boyd, and called by him "Emanometer." It appears from the diagrams that the only thing in common between the Emanometer and the Abrams apparatus is that they both contain coils of wire. All that the work of the British committee purports to show is that when certain substances are used in connection with the Emanometer of Boyd there are (alleged) changes produced in the abdominal wall of the "subject" of a kind that may be detected by percussion. The committee emphasizes that there is nothing in its work to show that there is any correlation between the alleged changes in the abdominal wall and any pathologic conditions, and that there is not the slightest justification for the use of the Boyd Emanometer in diagnosis or treatment. A careful and painstaking study of the committee's report leads us at this distance to express the opinion that even the one point that the committee thinks is proved, independent investigation will show to be a fallacy. In fact, one well known British physician, a fellow of the Medical and Electro Therapeutical sections of the Royal Society of Medicine, has already expressed similar doubts in a letter appearing in the same issue of the *British Medical Journal* as that containing the committee's report. The important thing to remember at this time, however, is that the newspaper report giving the public the impression that a responsible scientific body in Great Britain had put the stamp of approval on the "E. R. A." is without the slightest foundation. This can best be shown by quoting the summary of the British report:

> The conclusions arrived at in this communication leave the position of the practising electronist as scientifically unsound and as ethically unjustified as it was before. They give no sanction for the use of E. R. A. in the diagnosis or in the treatment of disease. Nor does there appear to be any other sanction for this kind of practice at the present time.[1]

As to the status of the Boyd "Emanometer" and the findings of the committee, time can be relied on to clear this up. In the meantime let us call to mind the way in which physicians of standing convinced themselves that Perkins tractors had great therapeutic virtues.

HEALTH IN PHYSICIANS' FAMILIES

Physicians have long borne the reputation of being more indifferent to the professional problems of their own families than they are to the demands of the public, to whom their lives are primarily devoted. Nevertheless, there exists a belief that the life and home conditions of the physician should exemplify the highest attainment of medical skill and hygienic foresight. It was disappointing, therefore, when Lennox [2] of Boston presented statistics about a year ago indicating that families in which the father is a physician do not have lower mortality rates among children than do other professional or business groups. Indeed, some of the data actually seemed to place the physician's family in a less favorable position with respect to the ills that medicine aims to remove or relieve. It is perhaps scarcely warranted to expect a better hygienic situation in the families of physicians than in the homes of other educated persons for whom medical services are also freely available. If economic independence, sufficient to assure comfortable conditions, shelter, food and clothing, is found among those who are well educated and have ready access to such services, we may expect low rates of mortality from preventable causes of death. This thesis Haven Emerson [3] has defended in an inquiry directed particularly toward maternity and infancy in relation to physicians' families, in which, as he properly remarks, the earliest application of our knowledge of health protection should occur. Through direct correspondence, Emerson has ascertained that the maternal risk rate and the infant mortality rate in the physicians' families investigated are far below any that have so far been reported during the same period of time for the communities in which the majority of these persons lived; namely, the larger cities of the Eastern states. We are led to believe that the facts of preventive medicine, so far as they affect the survival of mothers from pregnancies and the escape of infants from the hazards of early life, are probably better understood and more commonly and effectively used in physicians' families than among other groups in the community. If the maternal and infant mortalities throughout the population could be reduced to that which prevails among the families of physicians in the United States, it is estimated that there would have been saved 4,000 lives of mothers and 4,000 lives of infants under 1 year of age in the year 1922 alone.

1. A detailed account of the British committee's work appears in the London Letter, this issue, p. 528.
2. Lennox, W. G.: Child Mortality with Reference to Higher Education of Parents, Am. J. Hyg. **4**: 52 (Jan.) 1924. Child Mortality in Physicians' Families, editorial, J. A. M. A. **82**: 635 (Feb. 23) 1924.
3. Emerson, Haven: Maternal and Infant Mortality in Physicians' Families, Am. J. Hyg. **4**: 365 (July) 1924.

Lest professional pride go before the fall, however, it should be recalled that, according to Emerson, several cities in England have reported maternal risk rates for their entire population lower than that of even physicians' families in the United States; and, further, that lower infant mortality rates have been reported from New Zealand and from a number of our west coast cities during the last five years. It would be interesting to know whether the physicians' families also retain a leadership in those communities in the conservation of life.

YADIL BLOWS UP

Yadil, the British nostrum, was dealt with at some length in the Propaganda department of THE JOURNAL, Aug. 16, 1924. At that time we said: "The Yadil rocket is a vivid piece of nostrum pyrotechnics —but the stick will come down." The stick has come down. Yadil, it will be remembered, was supposed to be an esoteric form of garlic, and was heavily advertised throughout the British Isles and to a small extent in the United States. British newspapers and magazines accepted Yadil advertising without qualm; full-page and double-page spreads were not unusual. Then came a bomb in the form of an exposure of Yadil published in the *Daily Mail,* a London paper said to have the largest circulation of any newspaper in the British Isles. The exposé opened with an article by the senior professor of chemistry in the University of Cambridge, Sir William J. Pope, who declared that Yadil consisted of one part of formaldehyd, four parts of glycerin, ninety-five parts of water and a smell. The latter seems to have been produced by adding oil of garlic in the proportion of one ounce of the oil to about one hundred tons of water. Yadil was sold at the rate of $20 a gallon; Professor Pope said that a similar mixture could be prepared for 36 cents a gallon. The second broadside was an article from the well known pharmacologist, Prof. W. E. Dixon, at the University of Cambridge. There were three results from the exposure. The first and most important was that the sale of Yadil almost ceased; the second was an action for libel begun by the Yadil concern against the *Daily Mail,* Sir William Pope and Professor Dixon. The third was the application by the "patent medicine" concern for an injunction to restrain the *Daily Mail* from publishing further exposures. The injunction was refused. This was last August. Now comes news that the Yadil concern is in bankruptcy and its action for libel has been dismissed in the High Court of Justice, the costs to be paid by the nostrum company. A British pharmaceutical journal for January 24 briefly describes a meeting of the stockholders of the bankrupt Yadil company and quotes the suggestions that were made for future action. One of the individuals present at this meeting suggested that the business be revivified; this he thought could be done at an estimated cost of about $250,000. This gentleman's diagnosis of the present situation was that the Yadil business "was suffering from poison gas." Therein he was mistaken. What it was suffering from was too much light. The nostrum business is a parasite that flourishes only in the darkness of secrecy and ignorance. When the strong white light of scientific investigation is turned on it, it shrivels up and dies.

THE UNIVERSITY OF KANSAS MEDICAL SCHOOL

The University of Kansas has evidently reached a crisis in which definite decisions need to be made. Heretofore the university has been controlled by a board of three administrators who also administer the affairs of other state institutions, such as prisons and asylums. The greatest service the present legislature can render to higher education in Kansas is to provide for its state university a larger and more permanent board of unpaid directors whereby the university and its departments may be forever free from even the suspicion of political interference to which at present every change of administration makes it liable. To the lack of permanent control is doubtless due the fact that the medical school has for twenty years struggled under the handicap not only of being divided between two widely separated localities, but also of having the portion in each locality scattered to an unnecessary extent. The consolidation of the medical school is again under consideration, the question being as to whether it should be located at Lawrence or at Kansas City. If all other considerations are equal, the logical site for the medical school is on the campus of the university. Present developments in medical education call for both physical and functional coordination of the fundamental branches of medicine with the clinical in teaching and research. Whichever locality is selected, however, it would appear to be highly important that consolidation be brought about. There are great advantages in having one distinct medical school housed in its own group of strictly medical buildings. This may require drastic changes, but the expense will probably be more than offset by the saving hereafter of much time, energy and expense that are now being wasted. The decisions to be made in Kansas will be watched for with a great deal of interest.

Association News

THE ATLANTIC CITY SESSION

Reduced Railroad Fare to Atlantic City

The rate of one and one-half fare for the benefit of members and Fellows of the American Medical Association who will attend the annual session in Atlantic City, May 25-29, has been granted by the railroads. The member, when purchasing his ticket, pays the full one way fare to Atlantic City, at the same time securing his certificate from the railroad agent. This certificate will be approved at Atlantic City by the Secretary of the Association, must be validated by a representative of the railroads, and will then entitle the holder to a return ticket at one-half fare. The validation desk will be located near the Registration Bureau on the Steel Pier.

American Medical Golfing Association

The Eleventh Annual Tournament of the American Medical Golfing Association will be held at Seaview Golf Club, Atlantic City, Monday, May 25.

Dr. D. Chester Brown, Danbury, Conn., is president, Dr. Walt Conaway, Atlantic City, is secretary-treasurer, and

John Walter, Evanston, Ill., is business secretary of the American Medical Golfing Association.

Any Fellow of the American Medical Association may join the American Medical Golfing Association by paying the enrolment fee and subscribing to the by-laws. Application for enrolment should be sent to John Walter, 1507 Hinman Avenue, Evanston, Ill.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Supreme Court Upholds Verdict Against Chiropractor.—The verdict of the Dallas County Circuit Court, which prevented James A. Robinson, a chiropractor, from practicing because he had no license, was upheld by the state supreme court, January 15. Under provision of the 1923 code, quo warranto proceedings were brought against Robinson.

ARKANSAS

Influenza Prevalent.—There is an outbreak of influenza in Arkansas which, according to the state health officer, is the most serious since 1921. It had not markedly affected Little Rock up to January 30, although the death rate from pneumonia in that city was then unusually high.

CALIFORNIA

Smallpox in San Diego.—Fifty cases of smallpox were under treatment in San Diego, January 29, it is reported. There were only five cases during the entire year of 1923 in San Diego, and ten the year before. During 1924, the total number of cases was 130. A vaccination clinic is being maintained at the city hall.

Joseph Charles Gancau Given Six Months.—Confronted by two complaints by the state board, Joseph Charles Gancsu, Pasadena (THE JOURNAL, Jan. 24, p. 292), pleaded guilty to a charge of practicing medicine without a license, and was sentenced to six months on the county road gang. A second charge of practicing under a false certificate was dismissed.

Plague Prevention.—Among 3,903 rats and 215 squirrels examined at Los Angeles during the week ending January 10, one plague infected rat was found. The total number of rats examined up to that date was 31,612, according to *Public Health Reports*, and of these seventy-one were plague infected. Of all the squirrels examined none were plague infected. The last case of human plague at Los Angeles occurred, January 6. Ten plague infected rats were found at Oakland, between Dec. 13, 1924, and Jan. 10, 1925.

CONNECTICUT

Illegal Practitioner Fined.—"Dr." Vincent Lully, Stamford, was fined $300 and costs, January 27, for practicing medicine without a license. Lully, who does not speak English, admitted in court that he failed to pass the state board examination recently. He exhibited a diploma from Modena University, Italy, and agreed to leave the state.

DISTRICT OF COLUMBIA

New Medical Building for Howard University.—A bill authorizing the expenditure of $370,000 for a medical school building at Howard University, Washington, has been favorably reported from the Senate Committee on Public Buildings and Grounds. An additional appropriation for the equipment of the medical school is provided in the sum of $130,000. In the report from the committee to the Senate, Senator Harreld of Oklahoma states that:

> The Howard University is maintained and operated by the federal government under the Department of the Interior and is the only educational institution in the country (with the exception of a small school, the Meharry School, in the city of Nashville, Tenn.) maintaining a medical school for graduating colored physicians, dentists and pharmacists. This institution, because of lack of room and equipment, can accommodate but comparatively few of the numerous applicants. The result is a dearth of colored physicians, dentists and pharmacists throughout the country. The reason is not in the disinclination of colored young men to study medicine, but in the lack of medical schools maintained exclusively for their education as doctors and surgeons. Statistics show that there is a white physician to every 533 persons of the white race in the United States, while there is one colored physician to every 3,194 of the colored race. The disparity is even greater in the proportion of white and colored dentists. The bill carries $370,000 for a medical school building for Howard University and $130,000 for equipment, a total of $500,000.
>
> While many of the white medical schools are open to students of the colored race, the records show that few attend, and only about one dozen graduate from these institutions each year as physicians. This means that if the serious shortage of colored physicians and dentists is to be eliminated, the government must render aid and provide additional facilities.

Legislation of a similar character has been provided in the regular annual appropriation bills for the Treasury Department in 1923 and again in 1924. Such legislation, however, failed in each of those years because of technical objections made to those appropriations.

ILLINOIS

Resolution on Treatment of Crippled Children.—At a recent conference of committees representing the council of the Illinois State Medical Society and the Illinois Society for Crippled Children, in Chicago, the joint committee agreed, after discussion, to recommend to its respective societies that:

1. The Illinois State Medical Society provide an advisory council which shall consist of five members in good standing, whose duty it shall be to cooperate with, counsel and advise the executives and board of directors of the Illinois Society for Crippled Children on all methods of procedure in medical matters.
2. Any work undertaken under this proposal shall avoid the professional aggrandizement of any individual or group of individuals; and it shall studiously avoid the pauperization of the public.
3. If clinics be held in any locality in Illinois, they shall be held in conjunction with the local component unit of the Illinois State Medical Society.

Chicago

Court Forbids Birth Control Clinic.—The appellate court, February 3, reversed the order of the circuit court judge, which compelled the health commissioner of Chicago to issue a license for a birth control clinic.

Chiropractor Fined.—Fred Kabana, a chiropractor, 130 North Wells Street, and 5622 West Twenty-Second Street, Cicero, was fined $500 in municipal court, January 31, for practicing medicine without a license.

Personal.—George F. White, Ph.D., professor of organic and biologic chemistry, Clark University, has resigned to take a position with Bauer & Black, Chicago, manufacturers of surgical supplies.——Dr. Frank Billings was elected an honorary member of the American Stomatological Association at its recent meeting. Dr. Billings' contributions to the study of focal infections have been a stimulus to the growth of stomatology.

Society News.—Dr. Russell L. Cecil, New York, addressed the Chicago Medical Society, February 11, on "Recent Advances in Specific Therapy of Lobar Pneumonia" and Dr. Bernard S. Maloy, Chicago, on "Pneumonia with an Apparently Successful Treatment: Cold the Chief Exciting Cause."——At the annual meeting of the Chicago Ophthalmological Society, January 19, Dr. Charles P. Small was elected president; Dr. M. H. Lebensohn, vice president, and Dr. Robert H. Buck, secretary-treasurer.

IOWA

Society News.—Dr. Louis B. Bushman, Omaha, was elected president of the Sioux Valley Eye and Ear Academy, Sioux City, January 19; Dr. Frederick Bailey, Cedar Rapids, vice president, and Dr. Frederick H. Roost, Sioux City, secretary (reelected).

KENTUCKY

Ethyl Gasoline May Be Sold.—After a conference called to consider the sale of ethyl gasoline in Kentucky, the state board of health announced, January 27, it is reported, that ethyl gasoline may be sold. The board recommended that it be used only as motor fuel.

Organizer of World Antinarcotic Educational Bureau Arrested.—James T. Ford, Covington, Ky., who, it is reported, organized the World Antinarcotic Educational Bureau in which he sold memberships for from $5 to $25 and now is under indictment in the federal courts of Kentucky on charges of using the mails to defraud, was arrested in Milwaukee, January 24. According to the indictment returned last October, says the Milwaukee *Leader*, the advertising and literature pertaining to the World Antinarcotic Educational Bureau were sent through the mails, which scheme netted

Ford more than $100,000. The postal inspectors who made the arrest found in Ford's possession letters of recommendation from governors, mayors and other influential persons, some of which were said to be forged. Ford formerly conducted a national service bureau, in which he planned a catalogue of Catholic institutions, selling advertising space at $175 per page. The catalogue was never published, although he "worked the idea" in every state. Ford abandoned this stunt last May.

LOUISIANA

Plague Prevention.—The report of plague eradicative measures for the week ending January 10 shows 4,133 rodents examined at New Orleans, none of which were infected. In the total of 13,755 rodents examined up to that date, five were found to be infected.

Notice of Registration.—The state board of health has published a notice drawing attention to the requirements of the sanitary code with particular reference to places of business engaged in the preparation, handling or serving of food, all of which must register with their local board of health or with the Louisiana State Board of Health, as the case may be, under the provisions of the sanitary code. Places operating without a permit are liable to a maximum fine of $500, which after the second offense may be supplemented with imprisonment.

MARYLAND

Scarlet Fever at Havre de Grace.—The scarlet fever situation at Havre de Grace is reported as serious, with new cases notified daily. The state board of health has decided to keep the schools open so that a closer surveillance can be kept on all children.

Public Lectures.—Lee K. Frankel, Ph.D., vice president, Metropolitan Life Insurance Company, New York, gave a public lecture on "The Experience of Life Insurance Companies in Preventive Health Measures," February 9, at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore.——Dr. William A. White, medical superintendent, St. Elizabeth's Hospital, Washington, D. C., gave a public lecture on "Dementia Praecox," February 5, at the University of Maryland Medical School. This was one of a series being given weekly during January and February under the auspices of the Division of Medical Extension, University of Maryland.

Personal.—At the School of Hygiene and Public Health, Johns Hopkins University, January 26, Dr. George F. Dick, associate professor of clinical medicine, University of Chicago, lectured on "Scarlet Fever."——Dr. Herman N. Bundesen, health commissioner, Chicago, recently visited Baltimore to inspect the oyster beds in Maryland, to which typhoid fever in Chicago had been attributed. After an investigation made with the state conservation commissioner, Dr. Bundesen said, it is reported, that Maryland oysters were free from connection with the Chicago outbreak.——Dr. Francis M. R. Walshe, of University College and Queen's Square hospitals, London, is in Baltimore for six weeks, where he will be the visiting lecturer in neurology at the Johns Hopkins Medical School, and neurologist by courtesy at the Johns Hopkins Hospital. Dr. Walshe is an advocate of a new school, in which a group of young physicians, thoroughly trained in biology and physiology, could take over the care and treatment of neurologic diseases, as a separate department.——Dr. Edward M. Dodd, medical missionary to Persia, lectured on American medical work in the Orient, January 30, in the medical amphitheater of the Johns Hopkins Medical School. Dr. Howard A. Kelly presided.

MASSACHUSETTS

Sunday Afternoon Lectures.—Harvard University Medical School, Boston, has announced a course of free public lectures on medical subjects, to be given at the medical school, Sunday afternoons, from February 1 to April 26. Dr. Walter B. Cannon spoke, February 8, on "Some Factors Affecting Growth." Dr. Cecil K. Drinker will speak, February 15, on "Gas Poisoning and Electric Shock with a Demonstration of Treatment"; Dr. Edwin H. Place, February 22, "The Conquest of the Contagious Diseases"; Dr. Francis W. Palfrey, March 1, "The Family Medicine Closet"; Dr. William E. Ladd, March 8, "Abdominal Surgery in Childhood," and Dr. Elliott P. Joslin, March 15, on "Diabetes; How to Avoid It; How to Live Long with It."

MICHIGAN

National Board of Medical Examiners Recognized.—The state board of registration has agreed, according to the *Journal of the Michigan State Medical Society*, to recognize certificates of the National Board of Examiners and to issue Michigan licenses to licentiates of the national board.

Dr. Bruce Appointed Chief of Medical Service.—The board of regents, University of Michigan, appointed, January 30, Dr. James Deacon Bruce, Saginaw, director of the department of internal medicine at the medical school and chief of the medical service, University Hospital, Ann Arbor. After graduating at the Detroit College of Medicine and Surgery, Dr. Bruce was a country practitioner for several years and instructor at the University of Michigan Medical School for about two years. He has practiced at Saginaw since 1906, except during the World War, when he served with the Canadian medical corps, in England, and later with the M. C., U. S. Army, in France. Dr. Bruce will take up his new work late in the summer.

Society News.—Dr. William Allen Pusey, president, American Medical Association, will address, by invitation, the Kent County Medical Society, February 25, on "Our Changing Knowledge of Eczema."——The Wayne County Medical Society having established the Beaumont lectureship courses sometime ago now announces an Orthopedic Foundation with the oration to be given, March 16, by Dr. Robert B. Osgood, professor of orthopedic surgery, Harvard University Medical School, Boston, on "The Evolution of Orthopedic Surgery."——The Michigan State Medical Society conducted a postgraduate conference at Bay City, January 22. During February, conferences will be conducted at Jackson, Adrian and Flint.——The next meeting of the Michigan State Medical Society will be at Muskegon, September 8-10.

MINNESOTA

Society News.—At the recent meeting of the Hennepin County Medical Society, Minneapolis, the treasurer reported that the cost of conducting the society last year was a little less than $8,000. The receipts for the year were more than $9,000. Dr. Emil S. Geist was elected president, and Drs. Frederick A. Erb and Stephen H. Baxter, vice presidents.

The Ideal Medical School.—Dr. Elias P. Lyon, dean, Medical School, University of Minnesota, Minneapolis, outlines in *Minnesota Medicine* what he considers necessary for the ideal medical school, and then points out what is needed at Minnesota. The plan is to have a hospital of 575 beds which, after completion of the Todd and Cancer pavilions now under construction, will involve an addition of 275 more beds, including a forty-bed psychopathic hospital and an acute orthopedic unit as part of the greater hospital for crippled children. The school now has two laboratory buildings, neither of which is complete. The plan includes adding wings to Millard Hall and the Institute of Anatomy. The school needs a larger library, for which the new building is adequate, and a nurses' building. The dispensary is well attended but poorly housed. The departments now need equipment and the proposed additions will need equipment. Dean Lyon says that Minneapolis eventually must have a new city hospital and that the present institution, as well as Ancker Hospital, St. Paul, has for years furnished valuable teaching opportunities to the medical school. The distance, however, has been a handicap. (Hennepin County Medical Society unanimously passed a resolution recently favoring the removal of the Minneapolis General Hospital to a site on or adjoining the university campus.) After an investigation, the trustees of the General Education Board and the Rockefeller Foundation, New York, approved these plans. The General Education Board has offered the University of Minnesota $1,250,000 toward their fulfilment on condition that the university shall raise the balance.

MISSOURI

Society Opposes Liquor Bill.—The St. Louis Medical Society, February 5, sent to the St. Louis delegation in the legislature and to all county medical societies in the state copies of a resolution adopted urging the defeat of a bill now pending in the legislature which would make it a misdemeanor for physicians to write prescriptions for alcohol or other intoxicating liquor. The resolution stated, it is reported, that the bill is an unwarranted reflection on the integrity of the medical profession, and that there is a real need for the use of alcohol in the treatment of the sick.

The Brundidge Articles.—Summarizing the current articles of Harry T. Brundidge in the St. Louis *Star* concerning irregularities in licensing physicians by the state board of health (THE JOURNAL, February 7, p. 450) it appears that Ray B. Horton, Kansas City, was given a special "one man" examination and a license to practice after influential persons had written letters in his behalf to Dr. Cortez Enloe, then secretary of the board, and that Calvin A. Beard, Kansas City, a chiropractor and an M.D., was licensed after prominent men had written letters for him, although Beard's license in Connecticut had been revoked. It appears that credentials given the state board by Dr. Ralph A. Voigt, master mind of the diploma mill ring, were pronounced fraudulent by P. J. McKinley, formerly school commissioner, St. Charles, Mo., whose name was certified to Voigt's credentials. Brundidge says that the Missouri Board of Health has had fifteen months in which to take official action on the right of Dr. Voigt to practice in this state, although the records of the board fail to show that any inquiry into his right to practice in Missouri had been made. Voigt has been indicted in California and in Washington, D. C. He is the man, says Brundidge, who after being paid $1,475, made Brundidge a chiropractor and a doctor of medicine in fifty-seven days. It is interesting to note that when Voigt applied to the Texas Board of Medical Examiners for a license, he presented a diploma from the Potosi (Mo.) high school, which indicated that he attended that school from 1908 to 1912 when he was graduated. But Voigt presented to the Missouri board, according to Brundidge, credentials indicating that he attended Brooks Classical School, Chicago, from 1908 to 1910. Voigt told Brundidge that he bought the Potosi high school diploma.

State Board Issues Forty-Five Citations.—Dr. Emmett P. North, president of the state board of health, announced, February 5, that citations had that day been issued for forty-five physicians to appear before the board to show cause why their licenses to practice medicine and surgery should not be revoked, and that the circuit attorney had announced his intention to institute criminal proceedings against any person who had resorted to fraud in obtaining a license. Dr. North noted that the board months ago announced its intention of surveying the records for evidence that would warrant revocation proceedings. That survey, he said, has been completed, and the evidence prepared. With the issuance of these citations, the new secretary of the board, Dr. James Stewart, started to make another list of names, and additional citations will be issued later. Many of the physicians cited had recently had their licenses to practice in Connecticut revoked. According to the St. Louis *Star*, citations were issued for:

Walter E. Abell, St. Louis; Spurgeon H. Barnett, St. Louis; Calvin A. Beard, Kansas City; Waldo P. Briggs, St. Louis, dean and owner of the St. Louis College of Physicians and Surgeons; John R. Brinkley, Milford, Kan., known as the "goat-gland" specialist; Richard F. Boone, Kansas City; Frederick W. Brownfield, Crocker, Mo., a former dentist; Francisco Santos De La Madrid, Havana, Cuba; Joseph S. Ergas, St. Louis; James J. Flynn, Kansas City; Nathan H. Goldberg, St. Louis; Anna (Chena) Golstein, St. Louis; Richard Graeser, St. Louis; Solon P. Harris, New York; Otto C. Hauser, St. Louis; Morgan L. Halliday, Pollock, Mo.; Erwin F. Henselmeier, St. Louis, former dentist; Alonzo G. Hobbs, St. Louis; Ray B. Horton, Kansas City; Clarence L. Hobbs, St. Louis; Lesley E. Huber, Kansas City; Walter L. Kelley, Pearl, Ill.; Frederick J. Killalee, St. Louis; William V. J. Koutsoumpas, St. Louis, former druggist; Adolph M. Krall, St. Louis; A. J. Lofgreen, Kirkwood, St. Louis County; Lilburn D. Lahue, Kansas City; Thomas R. Moore, Maplewood; Horatius D. Osborn, Milford, Kan., assistant of Brinkley; Sylvan H. Rhodes, Los Angeles; Eugene J. Rinaldo, Los Angeles, former owner of a conservatory of music in St. Louis, under indictment in San Francisco charged with felonious conspiracy as the result of the Pacific Coast operations of the diploma mill; Cyril H. Rogers, Chicago; Albert Scheffsky, St. Louis; Salvatore A. Scimeca, formerly of Palermo, Sicily, now of St. Louis; Nicholas J. Scotellaro, St. Louis; K. L. Seaman, St. Louis; Walter J. Singleton, Kansas City; Charles C. Slaughter, Kansas City; James P. Vickery, St. Louis; Ralph A. Voigt, Kansas City, master mind of the national medical diploma mill ring, indicted in Washington, D. C., for misuse of the mails, and now under indictment in San Francisco in connection with the ring's operations on the Pacific Coast; William Fred Wagner, Jefferson City; Edward B. Waters, St. Louis; James B. Wood, St. Louis; Ralph E. Youmans, Kansas City; William T. Zeitler, St. Louis.

NEBRASKA

Society News.—At the annual meeting of the Lancaster Medical Society, Lincoln, Dec. 20, 1924, Dr. David C. Hilton was elected president; Dr. Herbert H. Waite, vice president; Dr. George H. Walker, treasurer (reelected), and Dr. Arbor D. Munger, secretary. Dr. Ora S. Fowler, Denver, addressed the society on "Nephroptosis."

Dr. Keegan Appointed Dean.—The board of regents, University of Nebraska, has unanimously elected Dr. J. Jay Keegan dean of the School of Medicine to succeed Dr. Irving S. Cutter, resigned. Dr. Keegan is a graduate of the University of Nebraska, and did postgraduate work at Harvard University Medical School, Boston. He is now secretary of the faculty, professor of clinical pathology, director of clinics and in charge of neurosurgery. He served in the navy during the World War, is a member of the American Association of Anatomists, the Society of American Bacteriologists and the American Society of Clinical Pathologists, and has made a number of contributions to medical literature.

NEW JERSEY

Hospital News.—Dr. Wells P. Eagleton, Newark, who recently returned from a trip around the world, addressed a staff banquet of the City Hospital physicians, January 24, concerning medical practices in various countries.

Personal.—At a reorganization meeting, January 1, Dr. Alfred A. Mutter, Arlington, was reelected president of the board of health of Kearny and Dr. Howard R. Dukes, Kearny, vice president.——Dr. John J. Magner has been elected a member of the Hackensack Board of Health.

NEW MEXICO

Personal.—Dr. Alva A. McDaniel has been appointed health officer of Catron County, succeeding Dr. Edward M. Parham, Mogollon.——Dr. William W. Johnston has accepted an appointment as full-time health officer of Eddy County. Dr. Johnston has been health officer of McKinley County for the last year.

State Health Laboratory.—Eight thousand six hundred and sixty-seven specimens were examined by the state public health laboratory, during 1924, at an average cost to the state of 64 cents per specimen, or a total of $5,860. The chief of the laboratory notes that had these specimens been examined by civilian laboratories at prevailing rates, the cost would have been more than $33,280.50. More than 160 physicians, aside from health officers, and twenty-three institutions, hospitals, asylums, schools and mining companies were served by the state laboratory in 1924.

NEW YORK

Dinner to Drs. Dick.—The Rochester Academy of Medicine entertained Drs. George F. and Gladys R. H. Dick, Chicago, at dinner at the Genesee Valley Club, January 28, after which Dr. George F. Dick read a paper on scarlet fever.

Oyster Legislation.—Bills were introduced in the legislature, February 4, which would prohibit the sale of all shell fish until they had first been inspected and tagged. They would provide for the examination every six months of persons employed in that industry, and for a bacteriologist and oyster laboratory on Long Island, and for patrols through the oyster bed waters.

New Motion Picture Films.—The state department of health announces that the following new picture films are available for organizations that may wish to employ them in public health work: "Working for Dear Life," a film in two reels showing the advantages of periodic physical examinations; "Well-Born," two reels on prenatal care; "Conquering Diphtheria," two reels showing the nature and action of antitoxin; "Meeting the Menace of Tuberculosis," two reels; "Warfare Against the Mosquito."

Trudeau Sanatorium Needs Endowment.—The board of trustees of the Trudeau Sanatorium, Saranac Lake, is seeking a fund of $1,000,000 to increase the institution's endowment. This announcement came on the fortieth anniversary of the founding by the late Edward Livingston Trudeau of the first open-air tuberculosis sanatorium in this country. The present facilities of the institution are entirely inadequate. The announcement states that the trustees are not starting another "drive" but are simply going to tell a wider circle the story of Dr. Trudeau's work, and trust to that appeal to bring its own response.

Personal.—Dr. Joseph B. Conolly of Glen Cove, L. I., has been reappointed a member of the board of managers of the County Tuberculosis Sanatorium at Plain View, Nassau County.——Dr. Richard Slee of Swiftwater, Pa., has been provisionally appointed as district state health officer, and has been assigned to Nassau, Suffolk and Rockland counties during Dr. Frank Overton's leave of absence.——Dr. Walter L. Bierring, Des Moines, Iowa, and Dr. William M. Root, Slaterville Springs, N. Y., visited the School of Medicine of the University of Buffalo, February 3, to install a chapter of Alpha Omega Alpha medical fraternity.

New York City

Needy Physicians in Europe.—A benefit performance of "Artists and Models" was given, February 9, at the Astor Theater under the auspices of the Association for the Relief of Needy Physicians of Central and Eastern Europe. It is stated that many noted physicians are still facing actual starvation, and that the aged daughter of Prof. Rudolf Virchow has become a ward of the city of Berlin.

Academy Recommends Buildings for Three Hospitals.—The Public Health Committee, New York Academy of Medicine, has sent to Mayor Hylan recommendations asking that buildings be constructed for Bellevue, Riverside and Willard Parker hospitals. For Bellevue, the committee requests a new outpatient building and new quarters for psychopathic patients. For Riverside and Willard Parker, new isolation buildings, mortuaries, laboratories and service buildings are asked, as well as a number of alterations and additions to present buildings.

Society News.—Dr. Jay Frank Schamberg, Philadelphia, addressed the Medical Society of the County of New York, January 26, on "The Present Status of the Treatment of Syphilis."——Dr. William H. Park, director of laboratories, New York City Department of Health, addressed the New York Physicians' Association, January 28, on "Recent Contributions of the Bacteriologic Laboratory to Clinical Medicine."——Arthur W. Thomas, Ph.D., addressed the New York Academy of Medicine at the stated meeting, February 5, on "Modern Colloid Chemistry," and Dr. Robert F. Loeb on "Application of Modern Concepts of Colloidal Chemistry to Medicine."

Neurologic Research Committee.—A group of pediatricians and public health authorities met, January 7, and constituted themselves a research committee to study the epidemiology, clinical and therapeutic data of acute anterior poliomyelitis, epidemic encephalitis and meningococcus meningitis with a view to furnishing facts that will be of service in indicating advances that can be made from a clinical and public health standpoint. Dr. Charles L. Dana was selected chairman; other members are Drs. W. W. Browning, Dever S. Byard, E. H. Lewinski-Corwin, Louis I. Harris, Howard Mason, William H. Park, Frederick Tilney, E. G. Zabriskie and Frank J. Monaghan.

NORTH CAROLINA

Insurance Without Medical Examination.—A bill has been introduced in the house—and it has passed the third reading—that would permit insurance policies up to $2,000 to be issued in this state without a physical examination. There is an amendment to the bill to the effect that where there is no medical examination, the policy shall not be rendered void on account of the physical condition of the applicant except in cases of fraud.

The Six Followers of Naturopathy.—Our correspondent writes that a strenuous effort is being made by the six followers of "naturopathy" in this state to secure a state board of examiners and licensure for their cult. At a recent hearing before the senate committee, among others who appeared against the measure were Drs. Watson S. Rankin, secretary, state board of health; James Vance McGougan, past president, state medical society; Kemp P. B. Bonner, secretary, state board of medical examiners, and William A. Monroe, chairman, legislative committee state medical society. The "naturopathic" cult had the assistance of the late attorney general of the state, who contended that since osteopaths and chiropractors were licensed, the state should also admit this cult. The senate committee deferred action.

OHIO

Smallpox at Akron.—The epidemic of smallpox at Akron amounted to thirty-eight cases, January 26, nearly all of which were in children. The type of the disease was said to be mild.

PENNSYLVANIA

Society News.—At a meeting of the Cambria County Medical Society, Johnstown, January 8, Dr. John W. Barr was elected president; Dr. Herman G. Difenderfer, Beaverdale, and Dr. Ray Parker, vice presidents, and Dr. Joseph J. Meyer, secretary-treasurer, reelected.

Bovine Tuberculosis Indemnities.—In view of the growing loss to livestock interests of the state due to the attempt to control bovine tuberculosis, the Pennsylvania Breeders' and Dairymen's Association recently passed a resolution asking the legislature to appropriate a fund of $2,000,000 for the next two years to be set aside specifically for the payment of indemnities for cattle condemned and killed on account of tuberculosis.

State-Aid Hospitals.—There are 150 hospitals in Pennsylvania receiving state aid. Of these, forty-one had exhausted their total appropriation before May 31, 1924. The mean per diem ward cost for each patient is $3.60, while the hospitals receive only $3 per day from the state. In 1924, there were 245,978 inpatients admitted to these hospitals. In the last eighteen months, in some, ambulance services and emergency departments have been abandoned, employees dismissed, and the efficiency of the institutions in their neighborhood reduced, owing to the need of funds.

State Society's Cancer Commission.—The Commission on Cancer, Medical Society of the State of Pennsylvania, recently reported a survey made in 1923, the object of which was to determine the effect of educational work on cancer. It had been about thirteen years since a similar survey was made and during that time a campaign of education has been made by the cancer commission of the state medical society, the American Society for the Control of Cancer and other agencies. The same questionnaire and methods were used in both surveys. A comparison seems definitely to affirm that cancer education pays. The length of time elapsing between the first symptoms of cancer and the time when adequate treatment was given was shown by the latter survey in every anatomic type of cancer to be reduced, the average time elapsing in 1,249 case reports in the 1923 survey being from four and a half to nine months less in the different types of cases than it was in the 1912 survey. The greatest improvement in time was in the physician's delay, but the delay of patients was also definitely reduced. Skin cancer cases showed a long average delay, due probably, says the *Bulletin of the Academy of Medicine of Cleveland*, to temporizing with local applications. Negative reports on uterine curettings were also responsible for many delays.

Philadelphia

Society News.—The Philadelphia Electrotherapeutic Society and the New York Electrotherapeutic Society held a joint meeting, February 4, at the Hotel Rittenhouse. Dr. Victor C. Pedersen, New York, spoke on "Electrotherapy in Urology," and Dr. Barton C. Hirst, Philadelphia, on "Electrotherapy in Gynecology."——The Philadelphia Pathological Society has elected Dr. Edward B. Krumbhaar, president; Dr. Eugene L. Opie, vice president, and Dr. Baldwin H. E. W. Lucké, secretary-treasurer.——The Rush Society of Philadelphia, for the correlation of medical lectures, has been reorganized. Dr. Alfred Stengel is president; Alfred N. Richards, Ph.D., vice president; Dr. Edward B. Krumbhaar, secretary, and Dr. Oliver H. P. Pepper, treasurer.

TENNESSEE

Medical Arts Building.—It is reported that bids were opened, February 6, for the construction of a Medical Arts Building, to cost $900,000, at Madison Avenue and Fourth Street, Memphis. The plans call for an eight story building of reinforced concrete and terra cotta, to be equipped exclusively for physicians and dentists.

TEXAS

New State Health Officer.—Dr. Harry O. Sappington, Galveston, has been appointed state health officer to succeed Dr. Malone Duggan. Dr. Sappington was formerly mayor and health officer of the city of Galveston.

Dr. Cook's Sentence Upheld.—The Federal Court of Appeals at New Orleans, February 3, affirmed the conviction of Dr. Frederick A. Cook, who was convicted months ago in Fort Worth, Texas, of using the mails to defraud in connection with selling oil stock. This decision will require, it is reported, that Dr. Cook start to serve his term, which was fixed at fourteen years.

Grand Jury Disapproves of "Patent Medicines."—The Bastrop County grand jury has passed a resolution asking the legislators from that district to introduce a bill in both the senate and house which would forbid the sale, manufacture and transportation in the state of Texas of such "patent medicines" as contain alcohol in excess of the amount permitted in nonintoxicating beverages.

WASHINGTON

Society News.—At the January 5 meeting of the King County Medical Society, Seattle, Dr. Arthur C. Crookall was elected president; Dr. Lester J. Palmer, vice president, and Dr. Charles E. Watts, secretary-treasurer.——Dr. Charles L. Mix, Chicago, en route to the Hawaiian Islands, addressed the surgical section of the King County Medical Society, Seattle, January 12, on "Goiter."——Dr. Edgar L. Gilcreest, department of surgery, University of California Medical School, San Francisco, will address the annual banquet of the King County Medical Society on "Personal Reminiscences of Sir William Osler."

Report on Postgraduate Course.—The chairman of a committee on the King County Medical Society, Seattle, reports that the postgraduate medical course given by the University of Washington, in cooperation with the King County Medical Society, last year, was attended by 208, the receipts being $3,130, the expenditures $2,796.43. The accumulated reserve funds amount now to $3,633.57. The committee aims to build up this reserve so it may be able to invite lecturers from afar. Sir Berkeley Moynihan, Leeds, England, has been invited for the next course, July 20-25. Other lecturers will be Dr. Llewellys F. Barker, professor of medicine, Johns Hopkins University Medical Department, Baltimore; Dr. John C. Clark, professor of gynecology, University of Pennsylvania School of Medicine, Philadelphia; Dr. Peter Bassoe, professor of neuropsychiatry, Rush Medical College, Chicago, each of whom will deliver five lectures and hold at least two clinics.

WISCONSIN

Complimentary Dinner.—The U. S. Veterans' Bureau and National Military Hospital, Milwaukee, and the U. S. Veterans' Bureau Hospital No. 37, Waukesha, will give a complimentary dinner, February 10, to the Milwaukee Academy of Medicine. Among the invited guests are Drs. Albert J. Ochsner and Solomon Strouse, Chicago, Carl A. Hedblom, Joseph S. Evans, Jr., Reginald H. Jackson, Dean Charles P. Bardeen, Chauncy Leake, Ph.D., all of Madison, and Dr. Myron W. Snell, Jacksonville, Ill.

PORTO RICO

Tuberculosis Bureau Organized.—The department of health of Porto Rico has organized a bureau of tuberculosis and opened tuberculosis dispensaries in many towns. An educational campaign is being conducted, and posters, pamphlets, lantern slides and moving pictures are in use throughout the island. Visiting nurses are given special training in dispensaries at San Juan. A large preventorium for pretuberculous children is being built. The tuberculosis mortality rate in Porto Rico in 1923 was 204.05 per hundred thousand inhabitants.

CANADA

Society Aims to Promote Cooperation.—One hundred physicians and twenty-five lay people representing as many organizations in the community, attended a dinner arranged by the Ontario Medical Association, Toronto, January 14. The speaker of the evening was the Honorable G. Howard Ferguson, prime minister of the Province of Ontario. The object of the dinner was to strengthen the bonds of cooperation and friendship between the medical profession and all other ranks in society whom the profession attempts to serve.

Society News.—The Canadian Health Service which consists of a weekly article on a health subject, supplied to the newspapers of Canada by the Canadian Medical Association, is receiving a splendid reception. A weekly circulation of one and three-quarters million has been achieved in less than two months' time.——Various medical organizations in Canada, acting through the Conference on the Medical Services, have adopted a resolution urging the government to continue to grant sums of money to the provinces to combat venereal diseases.

Postgraduate Work of Associations.—For the three and one-half year period commencing June, 1921, the Ontario Medical Association sent out to its component and district societies, 866 speakers. It is believed that this constitutes a record for extramural postgraduate work of this character. ——Dr. Alfred T. Bazin, McGill University Faculty of Medicine Montreal, and Dr. George S. Young, Toronto, recently made a tour of the societies of the Nova Scotia Medical Society. Medical and surgical clinics were conducted. The tour was arranged as part of an extramural postgraduate plan being followed by the Canadian Medical Association.

GENERAL

Dye Imports.—The Department of Commerce announces preliminary figures placing the import of synthetic dyes during 1924 at 2,825,990 pounds, with a value of $2,830,698. This represents a decrease of more than 270,000 pounds from the amount of dyes imported in 1923. The import of coal-tar dyes was nearly 46,000,000 pounds in 1914.

Publications of League of Nations.—The official publications of the League of Nations have been listed by the World Peace Foundation, 40 Mount Vernon Street, Boston, Mass., the sole American agent. Catalogue 7 Supplement contains a list of publications which were available up to January 1, with prices and information as to contents.

Epidemiologic Report.—The December, 1924, report of the health section of the League of Nations notes that scarlet fever is more prevalent than at the same season last year in Great Britain, Scandinavia, Poland, the Netherlands and Germany, and that a serious increase of this disease has been reported from many regions of Russia. Statistics concerning the outbreaks of influenza show little difference from those for the corresponding periods of the previous years. The outbreaks in the southern hemisphere are now declining.

Association for Research in Nervous and Mental Diseases.—At the annual meeting of this association, Hotel Commodore, Dec. 29-30, 1924, Dr. Walter Timme, New York, was elected president; Dr. Edward W. Taylor, Boston, vice president; Dr. Henry A. Riley, New York, secretary-treasurer, and Dr. Thomas K. Davis, New York, assistant secretary. The proceedings of this meeting, representing the results of the research under the auspices of the association, will be published and distributed to members without charge. Nonmembers may obtain copies from the publisher, Paul B. Hoeber, 69 East Fifty-Ninth Street, New York. Dementia praecox will be the subject for the December meeting.

Reform in Teaching Chemistry.—The committee of chemical education, American Chemical Society, reports that the entire body of chemistry teachers in the United States will be organized before the spring meeting of the society in Baltimore, with the possible exception of some southern states. It is the aim of the society to reform chemistry courses, to harmonize the programs of schools and colleges and to promote greater efficiency in the teaching of chemistry. It is planned eventually to apply the improved methods even in the remote regions of the South, where a survey will be made by the committee. The committee said "a subject advancing as fast as chemistry must have a dynamic outline, and this we propose to provide in the project of correlation."

Board of Physicians in Industry.—At the forty-sixth meeting of the Conference Board of Physicians in Industry, New York, January 16, methods for the care of trivial injuries were reviewed. More than 2,000 infections were reported among 32,500 workers during 1924, and of these about twenty had received treatment prior to the appearance of the infection. Practically all infections in such injuries resulted from delay in reporting for treatment. It was the consensus of opinion that all industrial injuries should have first aid treatment, record of the case being made by the one rendering the initial treatment and sent immediately to the medical department. The physician should see these cases or obtain a report within twenty-four or forty-eight hours. In the treatment of more serious cases of injury, particularly those drawing compensation, the most beneficial results to the worker who is recovering are obtained when he is returned to employment pending complete recovery. Some workers are unfavorably influenced by long periods of idleness; and it is difficult to get such persons to take up their employment again. Compensation boards frequently permit the worker to prolong his idleness on the ground that he has not recovered from the effects of the injury. It was the unanimous conclusion of the board that these practices delayed recovery. Many injured workers will do better when actively working with the injured part at their regular occupation than they will by going through passive movements and specified exercises at home or in a physiotherapeutic clinic.

Cramton Bill Reported Favorably.—A favorable report on the Cramton bill, to place all administration of the prohibition law under a separate unit of the Treasury Department, has been made to the Senate by the Committee on Judiciary. The bill passed the House at the last session, but has been the subject of controversy before the Senate committee by users of industrial alcohol, particularly manufacturing chemists. The bill was modified by the Senate committee to provide for a board of review to hear appeals in rulings

of the prohibition commissioner and for separate divisions to control industrial alcohol and beverage alcohol. This board, which will be composed of three members appointed by the Secretary of the Treasury, would have authority to review "all regulations and decisions respectively issued and made . . . relating to permits of all kinds, . . . use of ethyl or denatured alcohol or other liquors, and the imposition of penalties or assessments of every kind." The amended bill creates two new divisions: (1) A division of industrial alcohol, chief of which shall be a graduate chemist and a person of knowledge and experience in manufacture of ethyl and denatured alcohol, and the industrial use of denatured alcohol; (2) a division of nonbeverage alcohol, the head of which shall have experience and knowledge in ethyl alcohol and other liquors and in the manufacture of articles in which the use of ethyl alcohol and similar products is authorized under the federal prohibition law. The latter two amendments were placed in the bill on request of wholesale and retail manufacturers who insisted that their interests should be safeguarded by such amendments.

Society News.—The American Urological Association will hold its annual meeting in St. Louis, May 21-23, headquarters being at Hotel Chase. The mornings will be devoted to clinics in various hospitals, the afternoons to scientific programs. There will be a smoker, May 21, and the annual banquet, May 22. Dr. Homer G. Hamer, Indianapolis, is secretary, and Dr. John R. Caulk, St. Louis, is chairman of the committee on arrangements.——The Southern Section of the American Laryngological, Rhinological and Otological Society met in Jacksonville, Fla., January 19. Among others, Dr. W. Likely Simpson, Memphis, discussed "Gradenigo Syndrome with Report of Cases"; Dr. Elbyrne G. Gill, Roanoke, "Laryngeal Syphilis in Children," and Dr. John R. Page, New York, "Treatment of Subacute and Chronic Otorrhea." A banquet was tendered the section by the Duval County Medical Society, at which Dr. Walter E. Dandy, Johns Hopkins University Medical Department, Baltimore, gave an address on "Intracranial Lesions on the Borderline of Rhinology and Otology."——The American Association for the Study of Goiter, January 28-30, elected Dr. Edward G. Blair, Kansas City, Mo., president for the ensuing year; Drs. Gordon S. Fahrni, Winnipeg, Canada, and Joseph L. De Courcy, Cincinnati, vice presidents; Dr. Judson D. Moschelle, Indianapolis, secretary, and Dr. Julius R. Young, Terre Haute, Ind., treasurer. The midyear meeting will be at Atlantic City, May 26.——At the recent meeting of the American Society of Biological Chemists, Dec. 29-31, 1924, Washington, D. C., Henry C. Sherman, Ph.D., Columbia University, New York, was elected president; Edward C. Kendall, Ph.D., Rochester, Minn., vice president, and Walter R. Bloor, Ph.D., Rochester, N. Y., treasurer. The secretary is David W. Wilson, Ph.D., Philadelphia.

The Prohibition Law.—In making a summary of accomplishments made annually in the enforcement of the national prohibition law, Roy A. Haynes, director of prohibition enforcement, points out that bonded whisky in the United States is now concentrated in only sixty-two official warehouses. In 1923, untaxpaid whisky was stored in 296 distilleries in all parts of the United States, many of them in outlying sections, subjecting owners to great expense, loss and hazard. The adoption of rules by the prohibition unit, requiring medication that renders medicinal wines unfit for beverage use, has resulted in a reduction of the quantities of wines so used. In 1921, 6,353,000 gallons of wine was withdrawn for medicinal purposes; whereas in 1923, the quantity so withdrawn was 4,194,000 gallons. The use of specially designed blanks for physicians' prescriptions has resulted in better control of the quantity of liquor withdrawn. These special blanks were designed by experts in engraving, and the blanks, according to Director Haynes, are more difficult to counterfeit than paper currency. Formerly, these blanks were printed on ordinary paper, and large numbers of them were counterfeited. Additional protection is afforded by the use of a safety check writer in printing on each permit the kind and quantity of liquor permitted to be used under the permit. Limitation of the amount of liquor that wholesale druggists are permitted to sell has also helped to reduce the sale of liquor through such channels. This limitation requires that a wholesale drug organization shall not be permitted to sell liquor in quantities in excess of 10 per cent. of its gross drug business each year. Previously, there was a tendency on the part of persons desiring to deal in liquor to go into the wholesale drug business, merely for the purpose of selling liquor to the drug trade.

FOREIGN

Antivivisection in France.—The minister of hygiene recently informed the Académie de médecine that the conseil municipal at Paris and the conseil d'arrondissement at Bordeaux had filed a protest against the abuses of vivisection, and he asked the Académie to investigate whether it might not be possible to restrict vivisection experiences and prevent the "useless cruelty" to which the city fathers of Paris and Bordeaux object. The committee report on the subject was recently read by Balthazard, who explained that in his many years of experience he had not known of any instances of "useless cruelty"; that no experiments are made on animals without preliminary anesthesia, and that moving picture demonstrations are rapidly taking the place of experiments on animals in teaching physiology. Private laboratories could be easily affiliated with the official institutions in matter of control, but, he added, "It would be absolutely intolerable to give persons unacquainted with the needs of science the right to come into our laboratories and criticize our operations. There is already a systematically organized control by the deans of the faculties and the directors of the laboratories and scientific institutes . . . and the operations on animals are done under the same conditions as operations in the clinics."

Personal.—Prof. O. Vogt, director of the Institute for Research on the Brain, Berlin, has been appointed emeritus professor of the University of Oporto, Portugal, where he recently delivered a course of lectures.——Dr. Moses, Berlin, and a woman physician, Dr. Stegmann, Dresden, were among the five physicians recently elected to the Reichstag in Germany.——Prof. Arno B. Luckhardt, Chicago, was tendered a banquet by the Frankfurt medical faculty after his address relating his research on thyroidectomized dogs kept in good health by administration of calcium.——Dr. L. Aschoff, professor of pathology and pathologic anatomy at Freiburg, has returned home after a nine months' trip through North America and Japan. The addresses he delivered during the trip form a large volume to be published.——The *Klinische Wochenschrift* states that Professor Fülleborn, of the chair of tropical diseases at Hamburg, has been presented with the Japanese gold Katsurada medal.——Professor Mingazzini, of the chair of neurology, Rome, was made an honorary citizen of the city of Hamburg and a member of the local medical society when he lectured there recently on "Aphasia."——An ovation was tendered Prof. V. Putti, director of the Rizzoli Institute on his return to Bologna, Italy, from a trip to the United States. The government was represented by the undersecretary of state.——The Sorbonne has invited Dr. A. Adler, Vienna, to deliver a lecture on "Individual Psychology, and Its Importance in Treatment of Nervous Affections and in Education."——Dr. González Selong has been sent to Egypt by the Argentine government to study trachoma.——Prof. R. Bastianelli, Rome, is president of the newly founded Italian League for Prophylaxis of Cancer. It is planned to work with the Red Cross and the national public health service to educate the public and provide facilities for early diagnosis in all parts of the country.——Prof. A. Monti, Pavia, has been awarded the Valier prize by the Venetian Istituto di scienze for his work, "Malaria in the Italian War Zone, 1915-1919."——Drs. C. O. von Eicken and G. E. Brühl, Berlin, and Dr. H. Burger, Amsterdam, were recently elected foreign members of the Swedish Medical Association. This society distributed prizes and stipends from its twenty-two available endowed funds last year to a total of 76,673 kronor. There are forty-seven endowed funds, representing a capital of 1,934,704 kronor. Before the war, the Swedish krona represented about 28 cents.——Dr. N. Pende, of the chair of clinical medicine at Messina, is the rector of the newly organized university at Bari in southern Italy.

Deaths in Other Countries

Dr. **E. Hedinger,** professor of anatomy, Zurich, editor of the *Schweizerische medizinische Wochenschrift* since 1917, aged 51.——Dr. **Adolf Schenkl,** emeritus professor of ophthalmology, Prague, aged 83.——Dr. **Julius Morgenroth,** Berlin, a pioneer in chemotherapy, co-worker with Ehrlich in research on hemolysins and antibodies, aged 53. Since 1919 he has been director of the chemotherapy research department at the Koch Institute at Berlin. He died of pernicious anemia. The same institute has also lost Dr. **A. Schnabel,** in charge of research work on immunization processes.——Dr. **V. Pensuti,** Rome, the first editor of *Policlinico,* Baccelli's assistant.——Dr. **Leo Testut,** emeritus professor of anatomy, Lyon.——

Dr. Alberto **Segovia**, emeritus professor of biology at Madrid. ——Dr. **F. de Avila Gonçalves** has succumbed to bubonic plague at Ilha Terceira, Portugal, where there has been recrudescence of an endemic focus.——Dr. **W. L. von Lesser**, formerly privat-dozent at Leipzig, one of the founders of the *Zentralblatt für Chirurgie*, aged 79.——Dr. **E. Weber**, professor of physiology, Berlin.——Dr. **T. Koerner**, long president of the Silesia medical chamber, aged 83.

CORRECTIONS

Dr. Du Guid Is Not Dead.—Having received a report of the death of Dr. Joseph W. Du Guid, Macon, Ga., THE JOURNAL, January 31, page 386, published a notice, which, fortunately, has proved to be erroneous. According to the city health officer, Macon, Dr. Du Guid resides now at Dover, N. C.

Autobiography of Trudeau.—In THE JOURNAL for January 31, page 371, appeared an editorial relative to the fortieth anniversary of the Trudeau Sanatorium. A reference points out that the autobiography was published by Doubleday Page and Company. Information has been received that this book is copyrighted by Lea and Febiger, and that Doubleday, Page & Company are responsible only for the sale of the book to the public.

Government Services

U. S. Public Health Service

Surgeon **James G. Townsend** has been relieved from duty at Washington, D. C., and assigned to duty at Oakland, Calif., in connection with plague suppression measures.——Surgeon Richard H. Creel has been directed to proceed from Angel Island, Calif., to Los Angeles and return, to investigate the plague situation.——Surgeon Francis A. Carmelia has been directed to proceed from time to time as necessary, from Marcus Hook, Pa., in connection with the investigation of the pollution of shellfish, to points within the states of New York, New Jersey and Delaware.——Surgeon Sanders L. Christian has been detailed to participate in the Interchange of Sanitary Officers, which begins at London, February 9.——Surgeon Joseph Goldberger will conduct nutrition studies in Milledgeville, Ga., after delivering two lectures at the University of Georgia, Augusta.

Graduation at Army Medical School

Graduating exercises were conducted at the Army Medical Center, Washington, D. C., February 10. There were thirty-three medical officers graduated, including two from the Cuban army. Captain Harvey R. Livesay was awarded the Sternberg Medal and Lt. Leon L. Gardner the Hoff Medal. There were also ten graduates of the army veterinary school, the Hoskins Medal being awarded to Capt. Francois H. K. Reynolds, D.V.S., and nine graduates of the army dental school, the dental corps medal being awarded to Capt. Edward C. Alley, D.D.S.——Dr. Hans Zinsser, professor of bacteriology and immunity, Harvard University Medical School, Boston, and colonel, medical officers reserve corps, addressed the graduating class, February 6, at the Army Medical Center, on "The Phenomena of Hypersusceptibility as They Occur in Infectious Disease."

Pay for Army Nurse Corps

The Senate has passed the bill that gives to the army and navy nurse corps the status enjoyed by commissioned officers of the army and navy on retirement from the service. The bill creates a nurse corps retired list, and provides that an army and navy nurse who shall have served thirty years, or shall have reached the age of 50 years, having served as a nurse twenty years, is eligible to be placed in the grade of "Nurse Retired List." A member of the retired corps shall receive 3 per cent. of the annual base pay which she is receiving at the time of retirement multiplied by the number of complete years of service rendered prior to retirement. In addition to such retired pay, an army or navy nurse will receive a money allowance according to the rank in the service held by such nurse. The bill, as passed, provides that credit shall be given to army and navy nurses for service as contract nurse prior to Feb. 2, 1901, and service as reserve nurse on active duty since Feb. 2, 1901.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 31, 1925.

Sir James Mackenzie

By a curious irony, not unknown in medical history, Sir James Mackenzie has succumbed in his seventy-first year to heart affection and to the disease to which he devoted his last book—angina pectoris—from which he began to suffer a year ago. Born at Scone in 1853, the ancient place of coronation of the Scottish kings, he received his medical education at the University of Edinburgh, where he graduated in 1882. After a term as house physician at the Edinburgh Royal Infirmary, he studied at Vienna and then settled down to general practice in Burnley, a Lancashire manufacturing town, where he remained twenty-eight years. His career was something of a romance. Engaged in what to most men is an uninspiring routine, however useful and at times interesting it may be, he laid the foundation of researches which revolutionized cardiology and gave him enduring fame. On beginning practice, he realized that his previous studies had left him ill equipped for his work. At first he thought that the defect was personal and endeavored to remedy it. He read a vast number of medical works, and the truth dawned on him that the knowledge he was seeking was not available. The leaders of the profession were too engrossed in sciences other than medicine; simple practical questions left them dumb. He went to the root of the matter, saying: "Every sick man puts the same question to his physician: 'What does this symptom of which I complain mean for me?'" Even the most common of all symptoms, pain, was not understood. He set to work to remedy this defect, and made careful notes of the symptoms of his patients.

He soon found that the task was too great for him, and concentrated on disease of the heart. He turned the weary hours of attendance in the lying-in room to account by studying the parturient's pulse. With the help of a local watchmaker, he devised a new instrument, the polygraph, which in his hands revolutionized our knowledge of cardiac disease, by enabling a complete record to be made for the first time of the action of the heart. Then came his studies of heart irregularity, which turned the eyes of the medical world on the Burnley practitioner. He published his first important work, "The Study of the Pulse." At the meeting of the British Medical Association in Toronto in 1906, he read a paper in which he pointed out that depression of the cardiac stimulus through the bundle of His produces prolongation of the interval between auricular and ventricular contractions until the ventricular systole becomes irregular or drops out entirely, thus explaining for the first time the phenomenon of heart block. In 1907 he settled in London, and soon took his place as the foremost consultant on diseases of the heart. In the following year appeared his great work, "Diseases of the Heart," which was translated into German, French and Italian. In 1913 he was appointed physician in charge of the cardiac department of the London Hospital. But the work of the specialist did not satisfy his aspirations. He harked back to the wider problems of his early days as a general practitioner. While at the very zenith of his fame, he gave up his great position in London and migrated to the little Scottish city of St. Andrews, that he might better study the problems of disease, as here, in a comparatively stationary population, he could follow up his patients. He founded, what is unique in the medical world, the St. Andrews Institute for Clinical Research, and gathered round him the local practitioners to study medicine in the way he thought

it should be done. "The study of disease," he wrote, "will not advance until the general practoitioner becomes a research worker, because the general practitioner alone sees the earliest signs of disease." On two things he never tired of insisting—the necessity for the study of disease in its earliest stage, and the unreliability of laboratory methods. Thus, he wrote:

> It will come to be realized that the organs of the body are regulated by structures specially evolved for the purpose of conducting a peculiar form of energy called the impulse. The cells of the body have been specially evolved for the reception of this form of energy. The result of stimulation by the impulse is of a particular kind, being graded to suit the circumstances, purposive and effective. These conducting structures, nerves, etc., are not evolved for the conduction of electricity, nor are the cells of an organ made to respond to an electrical stimulus. Physiologists place the organ in artificial conditions, employ artificial stimulation, and obtain an artificial result. From such results they evolve the "law of all or nothing," because that always happens in response to electrical stimulation, the response being sudden, ungraded, and ineffective and purposeless, in striking contrast to the normal response. When this is realized, the whole of the physiological interpretation of the functional activities of organs will have to be scrapped. This is one of the results that I anticipate. Keep this in your mind twenty-five years hence.

A general conclusion that emerged from the St. Andrews studies is that symptoms are due to disorder of normal reflexes. Of other works besides those mentioned, his most important one was "Symptoms and Their Interpretation," which was translated into four languages. In a tribute to him published in the *British Medical Journal*, Sir Thomas Lewis, now our foremost cardiologist, says that Mackenzie will hold a place in British medicine beside Sydenham, Stokes, Graves, Addison and Bright. At the end he studied his own symptoms, "not unsuccessfully," for some further clue as to their meaning.

Electronic Reactions

At a joint meeting of the Sections of Medicine and Electro-Therapeutics of the Royal Society of Medicine, Sir Thomas Horder presented a lengthy report of a committee that had investigated the so-called "electronic reactions" of Abrams. The committee consisted of Dr. C. B. Heald, medical adviser to the director of civil aviation, Colonel Lefroy, the head of the wireless research of the air ministry, and Mr. Hart and Mr. Whately Smith, who are engaged in physical research for the war office and air ministry, respectively. Thus there were three laymen to two physicians. Sir Thomas Horder, who may be considered to have represented clinical medicine, consented to act as chairman. The work came under two divisions: 1. The purely physical. Do the blood and secretions of a patient give out any form of energy that can be detected and measured by physical means? 2. What relation does any tuned and recorded reaction "electronic energy" bear to known pathologic conditions? The committee did not investigate the Abrams apparatus, but examined the claims of Dr. Boyd of Glasgow, who has devised a new apparatus, which he calls the "emanometer," for obtaining "electronic reactions." One test was the discrimination between two apparently identical substances presented in such a way as to be indistinguishable in the ordinary way. Of twenty-five successive trials, all were successful. The following conclusions are drawn: 1. Certain substances, when placed in proper relation to the emanometer of Boyd, produce changes in the abdominal wall of the subject of a kind that may be detected by percussion. Thus the fundamental proposition underlying, in common, the original and certain other forms of apparatus devised for the purpose of eliciting the so-called "electronic reactions of Abrams" is established to a high degree of probability. 2. No evidence justifying this deduction is yet available from the work of those who practice with the apparatus designed by Abrams himself. 3. The phenomena appear to be extremely elusive, and highly susceptible to interference, so that in order to obtain reliable results elaborate precautions are necessary, particularly as regards the elimination of effects due to irrelevant objects. 4. It would be premature even to hazard in the most tentative manner any hypothesis as to the physical basis of the phenomena.

The committee insists that nothing in its communication is to be taken as implying that any correlation of those changes in the abdominal wall, referred to in the first conclusion, with pathologic conditions has yet been shown, or, *a fortiori*, that any justification—physical, pathologic, nosologic or clinical—exists for the use of either the Abrams or the Boyd apparatus in diagnosis or treatment. It regards as a condemnation of electronic practice the fact that, while electronists have been hard at work for some ten years, have "diagnosed" and "treated" thousands of patients, yet no contribution to pathology, which is the bed-rock of medicine, has been made by any of them. This is a significant fact, when it is remembered how epoch making are the claims made for E. R. A. It is concluded that the position of the practicing electronist is scientifically unsound and as ethically unjustified as it was before, and that there is no sanction for the use of E. R. A. in the diagnosis or treatment of disease.

The president put to the vote whether there should be a discussion on the report now or later, and the meeting decided against each alternative. This decision, as well as subsequent criticism, shows that the report is not regarded as quite satisfactory. In spite of its carefully guarded conclusions, the lay press and the E. R. A. practitioners hail it as a justification. "There's something in it" is the cry. A leading homeopath sounds a war whoop because Dr. Boyd happens to be a brother practitioner. He makes much of the statement that the "fundamental proposition" of the Abrams system is established "to a very high degree of probability." He declares that "the basal conception of the work of Abrams, thus validated, comes with no surprise to the homeopathic school." He ignores the condemnation of "electronic" practice.

Report of the Medical Research Council

The annual report of the Medical Research Council gives an encouraging survey of the progress of medical research. Insulin is referred to as "a cure for diabetes in the same sense as that in which food is a cure for hunger." Already we owe to it an immense diminution in the suffering of innumerable children and adults in all countries. The combined output of insulin of the British firms exceeds an average of a million units weekly, a supply not only sufficient to meet all the home demand, but permitting the export of large quantities. With increase in the scale of production, and with improvement in methods, five successive reductions in price were made within a year. The present price, effective since July last, is little more than a tenth of the original, and is considerably lower than the American. In one chief field the pathologist is opposed by a task that has long delayed the improvement of knowledge; namely, the solution of the problem of the invisible "viruses" which we have good ground to believe are the causative factors of many of our commonest diseases, such as measles, whooping cough, mumps, infantile paralysis, epidemic encephalitis, possibly the "common cold" and influenza.

Experiments were undertaken to determine whether tubercle bacilli in the skin or in other tuberculous tissues were killed or became modified in virulence by exposure to light rays from the Finsen-Reyn lamp. Inquiry had also been made into the actions of various oils on tubercle bacilli. It was observed during an investigation of naphthalene emulsion (of which one of the ingredients is olive oil), that in cultures of tubercle bacillus suspended and incubated in olive oil the bacilli were gradually killed. Of great interest was

the observation that olive oil that had been exposed to sunlight until bleached killed tubercle bacilli more speedily than olive oil that had not been so exposed. The experiments are being continued in collaboration with an expert in oils to ascertain how the differences in germicidal action of various oils could be correlated with differences in their physical or chemical constitution.

Investigations have been carried out respecting the effects of exposing the skin of man and of animals to ultraviolet light and other forms of radiant energy. The rays from a carbon arc or a mercury vapor lamp, as well as certain heat rays, were found to raise the bactericidal efficiency of the blood, owing to improved functions of the leukocytes. A similar result was found to occur after exposure to the Alpine sun in winter. It is suggested that this enhanced power of the blood to kill microbes played an important part in the beneficial action of sunlight on tuberculosis and other infections. In conformity with clinical experience, it has been found by experiment that irradiation for purposes of treatment must be carefully graded, since excessive exposures cause a deterioration of the blood no less striking than the improvement from smaller doses.

Surgery and Research

Sir Berkeley Moynihan, in his presidential address at a reception at Leeds University of members of the Science Masters' Association, who are holding their annual meeting in the city, said he could think of few researches made in the laboratory which compared either in scientific or in therapeutic importance with those which had been made by the surgeon during the last fifty years. The highest form of the experimental method in medicine was that which surgery offered. By swift changes surgery had grown safer, and still more safe, until at least it could be claimed that further increase of safety for the patients could depend only on an earlier access of the surgeon to the patient.

BELGIUM

(From Our Regular Correspondent)

Jan. 22, 1925

The Mutilations of War and Prosthetic Apparatus

The International Bureau of Labor was chosen in 1921, by the representatives of the large societies of war cripples, to look into the best types of working apparatus. A bureau was established at Brussels in 1921 with Dr. Florent Martin in charge. Following conferences of the war injured at Paris, Rome, London, Brussels and Belgrade, the Institut technique et scientifique de prothèse et d'appareillage was founded. Dr. Martin has published a report detailing the activities of this institute. He cites the modifications in operative technic brought about by the war and describes the basis of orthopedic treatment. He emphasizes the anatomic aspects and the systematic study of the stability and the mobility of the individual as affected by the lower limbs. The orthopedic treatment of the upper extremities requires keen and precise judgment. The author gives a general review of the extant prosthetic apparatus of limbs, and discusses the value of many forms of apparatus in particular. In closing, he emphasizes the cardinal principle that the surgeon and orthopedist should work hand in hand.

Free Milk Distribution on the Congo to Mothers and Infants

The Bulletin médical of Katanga reports that, in addition to the *goutte de lait* which has been functioning for several years under the patronage of her majesty, the Queen Elizabeth, the miners' union of Haut Katanga has recently established in its camps a *goutte de lait* for the children of natives. Infant mortality in this region is often in excess of 50 per cent., the principal cause being the ignorance of the native mothers. Artificial feeding is unknown among the natives. Thus, if a mother dies while she is still nursing her baby, or if her milk is insufficient, the child dies. The *goutte de lait* will combat all the causes of depopulation. A complete ration will be given to mothers, beginning with the sixth month of pregnancy and continuing during the period of lactation, with a limit of one year after the birth of the child. The society plans also to combat venereal disease. Weekly consultation hours for black babies will be held in all the camps. At this time useful presents, such as soap, sugar and clothing, will be distributed. Many members of the European colony have expressed a willingness to cooperate in this campaign.

Eumorphics and Glossoptosis

Before the Société belge de physiothérapie, Dr. Watry presented recently an original communication on "eumorphics," a branch of orthopedics that deals particularly with the reestablishment of form. M. Watry devotes himself more especially to abnormalities of the jaws and teeth. He emphasizes the importance of the bony formation of the face, cranium and spine. Any disorder of this bone complex affects the whole organism. Thus, a downward displacement of the base of the tongue causes a recession of the lower jaw, and occasions respiratory insufficiency and its consequences. Treatment should be instituted at an age when the tissues are still plastic, and should be directed against the causes of the maldevelopment. M. Watry displayed wax models that brought out the remarkable results secured in certain cases.

Calcium Medication in Pleurisy

At the recent convention in Liége of physicians of the army medical corps, Dr. Thone reported his results in the treatment of serofibrinous pleurisy by the Blum method. This includes the administration of large doses of calcium chlorid and a diet poor in sodium. The best results are seen in pleurisy of tuberculous origin treated from the onset of the effusion.

Vacation Courses

As an innovation in the history of medical journalism, as far as I know, the *Bruxelles Médical* has decided to organize for the coming Easter vacation three days of theoretical and practical lectures on the pathology and the therapeutics of diseases of the digestive tract. In a series of lectures and practical drills, the recent progress in the particular field of each of the members of the editorial staff will be reviewed. The theoretical discussions, illustrated by lantern slides, will be held in the forenoon, in the lecture room of the *Bruxelles Médical*. The three successive afternoons will be devoted to these topics: (1) practical demonstrations on the semeiology of the digestive tract; (2) biologic researches on the gastric juice, according to the newer and simplified methods, and (3) roentgenologic examination of the digestive tract.

Dilatations of the Bronchi in Relation to Tuberculosis

Before the Société belge de pédiatrie, Dr. Delcourt has presented his findings on the diagnosis of bronchiectasis simulating tuberculosis. He bases his diagnosis on the following signs: (1) absence of tubercle bacilli on numerous examinations of the sputum; (2) negative cutireaction, a series of trials being made; (3) the florid habitus of the patient, and (4) absence of increased temperature. He emphasized particularly the importance of a differential diagnosis between bronchiectasis, acute and chronic bronchopneumonia, and pleurisy.

State Aid for Anticancer Centers

The government has granted a subsidy of one million francs in aid of the anticancer centers, for the year 1925. This

sum will be divided among the four centers at Brussels, Ghent, Liége and Louvain.

Eye Disease in Relation to Tuberculosis

Before the Société belge d'ophthalmologie, Hambresin and Bessemans have presented an important communication on the complement fixation test in the diagnosis of eye affections associated with tuberculosis. They used the Calmette and Massol method and the Besredka antigen prepared by the Pasteur Institute in Paris. They eliminated consistently all patients whose history pointed to any injury due to trauma, syphilis, gonorrhea or a toxin. From their researches it appears that tuberculosis is a frequent cause of eye disease. The complement fixation test is entirely harmless in comparison with the bad effects of tuberculinization, ophthalmoreaction and focal reaction, all of which are dangerous. It is much more accurate than the cutireaction.

BERLIN

(From Our Regular Correspondent)

Jan. 17, 1925.

Drug Addiction

The Bavarian department of state has published the following notice:

The addiction to narcotic drugs has become so prevalent of late that grave fears are entertained for the health of the people. While it is true that morphinism and cocainism had made their entry into the large cities even before the war, and the extent of the addiction to drugs has been revealed more clearly in recent months through the operation of the opium law, it is nevertheless plainly evident that the abuse of narcotic drugs has increased during the war period, and especially since the end of the war.

Through the introduction of the opium law, the public will receive a large measure of protection, since the manufacture and sale and likewise the importation and exportation of narcotic drugs are now under the control of the government. There are, however, countless ways in which the established regulations can be defeated by the cunning displayed by morphin and cocain addicts, or to a still greater extent by professional smugglers. Even with strict control and drastic punishment of offenders, the law will not afford the protection needed until all classes of the population, including, especially, physicians and druggists, are willing to unite against the evil.

The ordinary method of circumventing the law is through the use of forged prescriptions. It has been established that in some pharmacies of the large cities as high as 95 per cent. of the prescriptions for narcotic drugs were forgeries. Forged prescriptions are not difficult for an expert to recognize. If pharmacists have the slightest suspicion as to the genuineness of a prescription, they should not fill it until they have satisfied themselves that the signature is that of a bonafide physician. Furthermore, persons presenting forged prescriptions should be reported to the authorities.

With regard to forgeries physicians can aid in the apprehension of swindlers by seeing to it that prescriptions are made out in proper form and supplied with a distinct signature, so that no question can arise as to their genuineness. When pharmacists refer back to physicians for the corroboration of signatures, they should be accommodated with prompt and definite information. From many quarters, proposals have been made of late that prescriptions for morphin and cocain be made out on special blanks adopted for that purpose. But it is not generally recognized that special blanks are necessary or would be of advantage, provided physicians will take proper care in the use of scientific terms and in stating the directions for the employment of the drug, for the unskilled forger will usually display his ignorance. Physicians should usually confine themselves to small doses, so that suspicion would attach to the large doses demanded by forgers.

Municipal Marriage Consultation Bureaus

It is planned to open in a district of Berlin a municipal marriage consultation bureau. It is proposed to give expert medical advice to matrimonial candidates with respect to their health viewed from the standpoint of prospective marriage; with regard to their sexual qualifications as spouse, and with reference to their eugenic fitness to become parents. Married women also will be given advice in questions pertaining to desired or undesired conception and concerning the use of means to prevent conception. For the installation of the necessary pessaries, women will be referred to their attending physicians, provided the latter are inclined to work in harmony with the welfare center and carry out its instructions; otherwise the women will be referred to other physicians. In the case of indigent patients, pessaries either will be applied at once in the consultation center or by the physicians in charge of the welfare service. It is not surprising that a service that goes so far beyond what is usually understood by a "marriage consultation bureau" should meet with opposition from physicians. In expression of its disapproval, the Berlin Aerztliche Nord-Verein has adopted the following resolution:

The Berlin Aerztliche Nord-Verein hereby raises a protest against the proposed establishment of a marriage consultation bureau in the municipal district of Prenzlauer Berg for the reason that it regards the new welfare center as superfluous and harmful in its effects and influence, since it is opposed to a reasonable conception of the proper attitude for a state to take toward the problem of the propagation of the race, as held by all political parties. All that is necessary and practicable in this direction can be accomplished better by the practicing physician.

The Berlin Aerztekammer (chamber of physicians) also has opened an inquiry into the matter.

BUCHAREST

(From Our Regular Correspondent)

Jan. 16, 1925.

Bacterial Decomposition of Milk

At the Medical Society in Bucharest, Dr. Iteanu showed examples and drawings of bacteria which he has found in decomposed milk. In this decomposition two different bacteria are engaged. In the first place, the casein is early attacked and destroyed by the influence of the microbe, which subsequently produces a very offensive odor. The carbohydrate or lactose next undergoes fermentation, producing quantities of lactic acid. To this class of bacteria belong two physiologically different microbes, one motile and the other not. The former have all the properties peculiar to the microbe described by bacteriologists, but the latter differ in many important particulars. These are rodlike bodies, some containing spores, others granular bodies that are colored blue with iodin and are obligatory anaerobic. Dr. Iteanu has succeeded in cultivating the same microbe from the soil, and by inoculating mediums with material from the dried muscle taken from animals that have died of anthrax, as well as from animals suffering from anthrax. These microbes agree with the nonmotile germ found in the milk in every particular of biology, morphology and physiology, and he considers that they are the same that produce the gaseous phlegmon in the disease.

Inhalation of Oxygen in Strychnin Poisoning

Some highly interesting researches on the influence of the inhalation of oxygen in checking the manifestations of strychnin poisoning in animals have been carried out by Dr. Gocan in Sebeniu. He noted, in the first place, that tolerance is never established in regard to strychnin, the same dose always producing the same reaction. Having ascertained the minimal dose of the alkaloid required to induce convulsions in a rabbit of given weight, he administered this dose to two animals, one of them being placed in an atmosphere of oxygen

while the other was left in the open air. He found that the first animal exhibited at most, some slight exaggeration of the reflexes, whereas the second animal developed the characteristic tetanic convulsions. When the animals had recovered, he reversed the order of the experiment, placing the second animal in oxygen and leaving the other in the open air, whereupon the former escaped but the first animal became convulsed. The experiment was much more conclusive when a lethal dose of the drug was injected, for in this case the control animal became convulsed and died, whereas the oxygen-breathing rabbit merely developed some degree of stiffness of the hind legs. The converse experiment proved equally conclusive, for animals placed in an atmosphere poor in oxygen developed violent convulsions with minimal doses.

The Injuriousness of Salicylic Acid

A firm of wine manufacturers in Bucharest were summoned a few days since for selling apple wine that contained 1 gm. of salicylic acid to the liter (about 12 grains to the pint), and after listening to some very conflicting medical evidence, the magistrate dismissed the case. The medical press of Roumania deals with the case extensively. One journal makes this comment: In this instance we are disposed to acquiesce in the magisterial view, because apple wine is not a beverage of which any one would be likely to take large quantities in a limited time, so that the comparatively large percentage of the acid would find its way into the body very gradually. It is quite otherwise in the case of milk, beer or the lighter wines, which are consumed in much larger quantities. Each case must be judged on its merits. There cannot be two opinions as to the injurious effects of the continuous ingestion of salicylic acid in large quantities, and this point should be borne in mind by the health authorities in deciding whether or not the proceedings ought to be taken. Every abortive action of the kind is detrimental to the administration of the law, and creates a prejudice against its officers, so that prudence and common sense ought to go hand in hand in the endeavor to secure the purity of articles of food and drink.

Jury Against Medical Evidence

At an inquest recently held in Craiova on a man who had died of apoplexy, a few days after the receipt of a blow on the forehead, the medical evidence established the fact that the cause of death had no relation to the injury, from the effects of which the man had recovered in the interval. The jury, however, found that death had been accelerated by the blow, and it was only when called to order by the coroner that it consented to return a verdict of death from natural causes.

The Disinfection of Public Vehicles

The health bureau of the city of Bucharest has passed a resolution on the management of the state railways and taxicab companies: The periodic disinfection and thorough cleansing of public vehicles, such as tramcars, omnibuses, railway carriages and taxicabs should engage the attention of the sanitary advisers of the respective companies. Given the disgusting habit of promiscuous expectoration, which so largely obtains, and in view of the amount of filth of all kinds brought into them by travelers, it is evident that such carriages may be active agents in the propagation of infection, especially as they are usually upholstered in a way admirably calculated to gather up and automatically distribute infected dust, microbes and vermin. Mere washing and brushing afford very imperfect protection against these risks, which, indeed, can be secured only by the methodical use of strong solutions of active germicides and the abandonment of textile fabrics in the construction of cushions.

Marriages

WILLIAM ERNEST FINDEISEN, Lieutenant Commander, U. S. Navy, Cavite, P. I., to Miss Lila Mary Healy of San Francisco, at Manila, Dec. 16, 1924.

ROBERT J. SNIDER, JR., Wheeling, W. Va., to Miss Mary Louise Shaw of Chillicothe, Ohio, at Columbus, January 17.

WALTER BRAZIE, Harlan, Iowa, to Miss Mona Black of Auburn, Neb., at Council Bluffs, Oct. 28, 1924.

HENRY WALTER LOURIA, Brooklyn, to Miss Felice Helen Jarecky of New York, January 22.

JOHN LANAHAN DORSEY to Miss Gertrude Allen Dixon, both of Baltimore, January 31.

EDWIN B. GODFREY to Miss Jane Raymond, both of Chicago, Dec. 19, 1924.

CARL APPLE to Miss Minnie Kaplan, both of Chicago, February 8.

Deaths

David Wilson Graham ✠ for many years clinical professor of surgery, Rush Medical College, Chicago, died at his home, February 9. He was born in Henderson County, Illinois, in 1843, and after graduation from Monmouth College, attended the Bellevue Hospital Medical College, New York, receiving his M.D. in 1872. He was demonstrator of anatomy at the Women's Medical School of Northwestern University, Chicago, 1874-1877, professor of anatomy, 1877-1882, and professor of surgery, 1883-1898. For more than forty years, Dr. Graham was connected with Rush Medical College, and since its founding with the Presbyterian Hospital. He was president of the Illinois State Medical Society, 1894-1895; of the Chicago Medical Society, 1885-1886; and of the Chicago Surgical Society, 1906-1907, Dr. Graham was a member of the American Association of Obstetricians and Gynecologists, and of the Chicago Pathological Society, a Civil War veteran, formerly surgeon to the Cook County Hospital, the Central Free Dispensary, and consulting surgeon to the Evanston Hospital. He served the American Medical Association as a trustee from 1894 to 1897. A son, Dr. Evarts A. Graham, is professor of surgery in Washington University Medical School, St. Louis. Dr. Graham was a man of rugged character with a characteristic humor and a striking personality.

William Glassell Somerville ✠ Memphis, Tenn.; Medical Department of Columbia College, New York, 1889; member of the American Psychiatric Association; formerly professor of neurology and psychiatry, University of Tennessee College of Medicine, Memphis; served in the M. C., U. S. Army, in France, during the World War; on the staffs of the Memphis General, St. Joseph's, Methodist and Baptist hospitals, and the Crippled Children's Home; aged 58; died suddenly, January 27, at St. Louis, of heart disease.

Frederick Albert Lawton Lockhart, Montreal, Que., Canada; University of Edinburgh, Scotland, 1889; McGill University Faculty of Medicine, Montreal, 1900; clinical professor of gynecology at the McGill University Faculty of Medicine, and formerly professor of surgery and gynecology, University of Vermont College of Medicine, Burlington; on the staff of the Montreal General Hospital, where he died, January 10, of tetanus, following frost bite, aged 60.

Junius L. Powell ✠ Lieutenant Colonel, U. S. Army, retired, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1867; commissioned assistant surgeon, 1879; retired on account of age, 1908; Confederate veteran; served in the Indian and Spanish-American wars, the Philippine Insurrection and the World War; aged 79; died, January 1, at the Walter Reed General Hospital.

George Frank Wilklow ✠ Ellenville, N. Y.; Bellevue Hospital Medical College, New York, 1898; past president of the Ulster County Medical Society; veteran of the Spanish-American and World wars; formerly health officer of Wawarsing; at one time on the staff of the Benedictine Hospital, now Our Lady of Victory Hospital, Kingston; aged 52; died, January 10.

John Joseph Cronin, New York; Medical Department of Columbia College, New York, 1893; member of the Medical

Society of the State of New York; formerly adjunct professor of sanitary science, Fordham University School of Medicine; for many years director, division of child hygiene, New York City Department of Health; aged 57; died, January 30.

Gonzalo Edward Buxton, Providence, R. I.; Medical Department of Columbia College, New York, 1875; Medical School of Harvard University, Boston, 1876; member of the Rhode Island Medical Society; formerly member of the National City, Calif., Health Board; aged 75; died, January 25, of heart disease.

William Williams MacDonell, Jacksonville, Fla.; Vanderbilt University Medical Department, Nashville, Tenn., 1905; member of the Florida Medical Association; past president of the Duval County Medical Society; city health officer; aged 43; died, January 18, of a self-inflicted bullet wound.

Andrew Clinton Hansen, San Diego, Calif.; Northwestern University Medical School, Chicago, 1902; served during the World War; formerly a practitioner in Illinois and Iowa; aged 54; died, Dec. 4, 1924, at the U. S. Veterans' Hospital, No. 24, Palo Alto, of cerebral hemorrhage.

Roscoe Conkling Wilson ✠ Ithaca, N. Y.; Long Island College Hospital, Brooklyn, 1901; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 55; died, January 18, at the Jefferson Hospital, Philadelphia, following an operation.

Claude Clinkscales Gambrell ✠ Abbeville, S. C.; University of Maryland School of Medicine, Baltimore, 1898; member of the state board of health; served in the M. C., U. S. Army, during the World War; aged 52; died, January 13, of heart disease.

Daniel Clarence Mangan ✠ Brooklyn; Medical Department of the University of the City of New York, 1891; formerly professor of organic and inorganic chemistry and physics, Brooklyn College of Pharmacy; aged 58; died, January 6, of pneumonia.

Ambrose Henry Mouser, Latty, Ohio; Columbus Medical College, 1889; member of the Ohio State Medical Association; served in the M. C., U. S. Army, with the rank of captain, during the World War; aged 58; died, January 21, of septicemia.

Dean Wardell Jennings, Catskill, N. Y.; Albany Medical College, 1907; member of the Medical Society of the State of New York; served in the M. C., U. S. Army, during the World War; aged 41; died, January 25, of septicemia and pneumonia.

Frederick Michael Nolan, Washington, D. C.; Georgetown University School of Medicine, Washington, 1915; served in the M. C., U. S. Army, during the World War; aged 34; died, January 13, at the U. S. Veterans' Hospital, Oteen, N. C.

Raymond Stoner Freed ✠ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1904; served in the M. C., U. S. Army, during the World War; aged 46; died, January 21, at the Mercy Hospital of septicemia.

Charles B. Byrne ✠ Colonel, U. S. Army, retired, Washington, D. C.; University of Pennsylvania School of Medicine, Philadelphia, 1867; aged 78; died, Nov. 24, 1924, at the Walter Reed General Hospital, of arteriosclerosis.

Frank P. Yates, Rusk, Texas; University of Tennessee College of Medicine, Memphis, 1884; member of the State Medical Association of Texas; on the staff of the East Texas Hospital for Insane; aged 71; died, January 17.

John Walter Jones, Boone, N. C.; Chattanooga (Tenn.) Medical College, 1900; member of the Medical Society of the State of North Carolina; aged 48; died, January 14, at a hospital in Knoxville, Tenn., of pneumonia.

Elliott Abel Cobb, Harlan, Iowa; University of Wooster Medical Department, Cleveland, 1868; Bellevue Hospital Medical College, New York, 1879; aged 81; died, January 12, of senility and chronic myocarditis .

George B. Nye, Waverly, Ohio; Rush Medical College, Chicago, 1897; member of the Ohio State Medical Association; formerly member of the state legislature; aged 47; died, January 16, of heart disease.

Lucy Hazlett Black Reznor, Erie, Pa.; University of Michigan Homeopathic Medical School, Ann Arbor, 1903; aged 44; died, Oct. 28, 1924, at Cleveland, of chronic myocarditis and carcinoma of the stomach.

Clarence C. Rinehart, Mill Valley, Calif.; Hahnemann Medical College of Philadelphia, 1878; Civil War veteran; formerly on the staff of the Pittsburgh Homeopathic Hospital; aged 81; died, January 21.

Daniel Williams Box, Vernon, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1885; member of the Medical Association of the State of Alabama; aged 65; died, January 15, in Birmingham.

Moses Milton Baumgartner, Goodwell, Okla.; Rush Medical College, Chicago, 1901; formerly president of the Stephenson County (Ill.) Medical Society, and county coroner; aged 50; died, Dec. 19, 1924.

Edward Chauncey Booth, Somerville, Mass.; Medical School of Harvard University, Boston, 1877; member of the Massachusetts Medical Society; aged 75; died, January 18, at Winter Park, Fla.

Philip Gray Wales, Major, U. S. Army, retired, Menlo Park, Calif.; George Washington University Medical School, Washington, D. C., 1883; aged 63; died, Nov. 2, 1924, of angina pectoris.

Charles B. Tweedale, Cheboygan, Mich.; University of Buffalo (N. Y.) Department of Medicine, 1888; aged 58; died, January 22, at the Mercy Hospital, of injuries received in a fall.

Charles Albert Sewall, Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1872; member of the California Medical Association; aged 75; died, January 14.

George Graves, Herkimer, N. Y.; University of Buffalo Department of Medicine, 1870; member of the Medical Society of the State of New York; aged 76; died, January 24.

Edwin Marshall McConnell ✠ Grove City, Pa.; Western Reserve University School of Medicine, Cleveland, 1888; served during the World War; aged 62; died, January 16.

David S. Hutton, Smithton, Pa.; College of Physicians and Surgeons, Baltimore, 1887; member of the Medical Society of the State of Pennsylvania; aged 71; died, January 10.

Wilson M. Lenox, Hobson, Mo.; St. Louis College of Physicians and Surgeons, 1883; Confederate veteran; aged 81; died, January 12, following a long illness.

Abraham F. Balmer ✠ Brookville, Pa.; Jefferson Medical College of Philadelphia, 1875; aged 75; died, January 19, at Waynesburg, of heart disease.

Charles Herbert Gerhard, Kirkwood, Mo.; University of Pennsylvania School of Medicine, Philadelphia, 1905; aged 49; died, in November, 1924.

Berte V. Franklin ✠ San Diego, Calif.; University of Southern California College of Medicine, Los Angeles, 1901; aged 49; died, January 16.

David J. States, Moundsville, W. Va.; Pulte Medical College, Cincinnati, 1884; Civil War veteran; aged 79; died, January 20, at Pittsburgh.

Arthur Randolph Green ✠ Mount Kisco, N. Y.; Cornell University Medical College, New York, 1903; aged 53; died, January 17, of uremia.

Edward M. Clifford, Greensburg, Pa.; Jefferson Medical College of Philadelphia, 1882; aged 68; died, January 1, following a long illness.

Alexander C. Hermance, Rochester, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1887; aged 67; died, Nov. 25, 1924.

Lindsey K. Tainter ✠ Fredericksburg, Texas; Missouri Medical College, St. Louis, 1886; aged 65; died, January 18, of pneumonia.

Charles Goddard Stearns, Worcester, Mass.; Medical School of Harvard University, Boston, 1881; aged 74; died, January 16.

Nellie Vaughn Forrest Tucker, Chicago; Hering Medical College, Chicago, 1899; aged 60; died, January 29, of carcinoma.

George B. Warne, Chicago; Hering Medical College, Chicago, 1897; aged 74; died, January 22, of acute dilatation of the heart.

Jefferson D. Bradley, Kingston, Ga.; Southern Medical College, Atlanta, 1888; aged 63; died, January 14, of angina pectoris.

William D. Martin, Alpharetta, Ga.; Atlanta College of Physicians and Surgeons, 1904; aged 44; died, January 14.

William Frank Meyer, St. Louis; St. Louis University School of Medicine, 1905; aged 44; died, January 5.

Robert W. Trotter, Madison, Ga.; Southern Medical College, Atlanta, 1889; aged 68; died, January 16.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ASPATOL

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Aspatol is sold by the Standard Chemical Company, Des Moines, Iowa, as representing "in pleasant and permanent form and in special combination, forty grains of the soluble salt of Acetylsalicylic Acid per fluid ounce." According to the label "This preparation tends to avoid gastric and intestinal irritation, nausea, restlessness, and such unpleasant results as may develop from the use of other Salicylates."

Some time ago an inquiry was received which referred to the claims made for Aspatol, asking whether or not it is possible to incorporate acetylsalicylic acid or any salt of this substance in liquid form without decomposition occurring. Ever since acetylsalicylic acid (aspirin) has been in popular vogue, some firm or other has endeavored to dispense it in liquid form. A number of years ago pharmaceutical magazines were giving out information as to how a "stable" solution of acetylsalicylic acid could be prepared by dissolving the acetylsalicylic acid in a rather strong sodium citrate solution. At that time the A. M. A. Chemical Laboratory[1] showed that when such a solution was prepared, the acetylsalicylic acid broke down, as was to be expected, so that after seventeen days a patient taking such a solution was in reality taking the equivalent of sodium salicylate—with all its advantages and disadvantages. In fact, such a preparation was 75 per cent. decomposed in that time and was far from being a "stable" solution. Notwithstanding this added evidence of the instability of acetylsalicylic acid in water, the Des Moines "Standard Chemical Company" makes the claim that their preparation does not break down. For instance, in a letter sent out by the concern, signed by F. A. Mallett, *Factory Superintendent* [italics ours] the following statement occurs:

"Aspirin, or Acetyl Salicylic Acid, as you know, Doctor, is almost insoluble in water, or syrup, so to make a soluble Aspirin preparation, it is necessary to convert the Acetyl Salicylic Acid into a soluble salt. This we do by our special process; thus making an Acetyl-Salicylate which is soluble in syrup base.

"Hence, our preparation really does contain Aspirin, combined as an Acetyl Salicylate, which is the only water soluble form.

"This preparation, sometimes called "Soluble Aspirin," is being used by a great number of physicians where Aspirin is indicated and in many cases they prefer the pleasant quick-acting soluble salt to the tablet."

As such claims concerning the stability of the preparation seemed unlikely, the A. M. A. Chemical Laboratory was asked to investigate the product.

LABORATORY REPORT

"One original specimen of Aspatol was obtained from the Standard Chemical Company of Des Moines, Ia., and the contents submitted to examination. The bottle contained one pint of a syrupy liquid having an aromatic odor and a reddish-orange color. Qualitative tests indicated the presence of calcium, a very small amount of acetylsalicylate, considerably larger amounts of salicylate, acetate and invert sugar. Quantitative determinations yielded the following:

"Specific gravity (at 25 C.)	1.18
"Acetylsalicylic acid	0.71 per cent.
"Salicylate (as salicylic acid)	3.83 per cent.
"Calcium (Ca^{++})	0.95 per cent.
"Invert sugar	14.06 per cent.
"Ash	1.38 per cent.

"From the foregoing, it is concluded that the solution was probably prepared from calcium acetylsalicylate, but as was expected it had been decomposed. The amount of acetylsalicylate present represented only about 12.41 per cent. of the original acetylsalicylic acid (as calculated from the quantitative estimations).

"Thus each dose (one teaspoonful) of Aspatol may be considered to contain essentially acetylsalicylic acid .034 gm. (about ½ grain); salicylic acid in the form of both free salicylic acid and salicylates equivalent to 0.20 gm. (3 grains) and calcium salicylate with some calcium acetate in a syrupy solution. From a chemical standpoint this preparation has no advantages over the well-known salicylates."

The work again points out that acetylsalicylic acid and its salts are not stable in aqueous solutions, and physicians should bear this incompatibility in mind when importuned by advertisements or detail men to employ aqueous solutions of acetylsalicylic acid (aspirin).

The Council declared Aspatol (Standard Chemical Company, Des Moines, Iowa) unacceptable because its composition is not correctly stated; the claims made for it are unwarranted, and the name is not descriptive of its composition.

1. Leech, P. N.: Acetylsalicylic Acid in Sodium Citrate Solution, J. A. M. A. 78: 275 (Jan. 28) 1922.

"F. & R.'S GENUINE GLUTEN FLOUR" NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

"F. & R.'s Genuine Gluten Flour" (Farwell & Rhines Co., Watertown, N. Y.) according to the label, contains 40 per cent. of gluten. The label contains the statement that the product complies "in all respects to the Department of Agriculture requirements for Gluten Flour." This is a reference to U. S. Department of Agriculture, Food Inspection Decision 160, issued January 6, 1916, under which the designation "Gluten Flour" may be applied legally to a product which contains as much as 44 per cent. of starch.

In the advertising circulars issued by the Farwell & Rhines Co., the starch content of its "Genuine Gluten Flour" is not directly stated. The statement is made:

"Genuine Gluten Flour contains four times as much protein as is found in regular white flour; on the other hand, it contains only one-half as much carbohydrates and, therefore, is a most valuable food in the diet for that class of people who must have a high per cent. of protein and a low per cent. of carbohydrates."

A pamphlet entitled "Valuable Diet List for Dyspepsia, Diabetes and Bright's Disease" includes under the foods which the diabetic may take, "bread, gems, muffins and wafers made from Farwell & Rhines' Gluten Flour" and advises "Use Farwell & Rhines' Gluten Flour in all soups and gravies."

In the correspondence with the Council, the Farwell & Rhines Co. admitted the high starch content of its "Genuine Gluten Flour," that is, it stated that the product meets the standards of Food Inspection Decision 160, which sets the permissible content of starch at "not more than 44 per cent." The firm argues that "inasmuch as Genuine Gluten Bread contains four times as much protein and only half as much carbohydrates as regular white bread, it can be used to good advantage by physicians in prescribing a diet after the period has passed when it is necessary to prohibit all carbohydrates." F. & R.'s "Genuine Gluten Flour" is technically within the requirements of the government's definition of a gluten flour; it is not, however, a safe food for indiscriminate use by diabetics. When gluten flour is prescribed by physicians, it is for the purpose of providing a substance that is low in starch and other assimilable carbohydrates.

In its discussion of "Foods for Diabetics" (New and Non-official Remedies, 1924, p. 192), the Council explains: The essential purpose of dietetic treatment of diabetes is to abolish glycosuria, hyperglycemia and acidosis by the reduction of the carbohydrate intake. Foods containing not more than 10 per cent. of sugar-forming carbohydrate have generally been regarded as permissible; those containing higher amounts must be used with greater caution. It is therefore necessary that the carbohydrate content of foods for diabetics should be accurately stated.

In this discussion, it is pointed out that the protein intake as well as that of carbohydrate should be known and sharply

restricted and that the chief function of a diabetic bread is to provide a palatable bread-like vehicle for butter, cheese and the like and that a high food value is not important or even desirable.

The Council declared F. & R.'s Genuine Gluten Flour inadmissible to New and Nonofficial Remedies because the application of the term gluten flour to a preparation containing 40 per cent. of starch is likely to be misleading and dangerous.

Correspondence

"CALCIUM AND PARATHYROID GLANDS IN RELATION TO HYPERESTHETIC RHINITIS"

To the Editor:—In the article on this subject (THE JOURNAL, Dec. 20, 1924), statements were made by Drs. Sonnenschein and Pearlman which, unless corrected, would convey the wrong impressions.

1. The calcium standard is given as from 9 to 11 mg. per hundred cubic centimeters of blood serum. It is neither reasonable nor scientific to establish such a wide range of normality; for, if such were the case, it would be extremely difficult to make a classification of calcium deficiency diseases. As the standard, 10.5 mg. has been commonly accepted, although this standard is of no particular significance, because, as Woringer (Hypocalcémie et spasmophilie, *Arch. de méd. d. enf.* **26**:713, 1923) has shown in spasmophilia, hypocalcemia is more pronounced in the manifest forms of the disease than in the latent forms. Furthermore, the hypocalcemia is not in direct relationship with the gravity of the disease. Thus, the calcium deficiency may be only fractional with severe symptoms of the disease. On the other hand, the deficit may be comparatively large, the symptoms mild.

2. The inefficiency of parathyroid substance is not and has not been disputed. Nevertheless, this does not alter the situation with reference to the possible function of the parathyroids. Thyroid has been employed from the outset and is spoken of in the preliminary report (Novak, F. J., Jr., and Hollender, A. R.: Influence of Ultraviolet Irradiation on Calcium Content of Blood Serum in Hay-Fever, Hyperesthetic Rhinitis and the Asthmas, THE JOURNAL, Dec. 15, 1923, p. 2003). "From these results with the single and combined therapy, it is evident that the thyroid extract (or parathyroid) plays an important part in (1) stimulating the calcium of the body, or in (2) activating the artificial calcium and fixing it so that it is not immediately excreted."

3. The statement is made, "We know, however, that as a rule a diminished metabolism is not present in this condition" (hyperesthetic rhinitis). This is not in accord with the findings of several others, who have demonstrated that, in many instances, a low metabolic index is present.

4. The question is asked, "Is a calcium deficiency usually or always the cause of a hyperesthetic rhinitis?" The answer is given thus: "Our own clinical results are not of much value, since we also committed the error of using both local and general measures at the same time, and therefore do not know to which one to ascribe the good results that we have had in some cases."

That part of our preliminary report referring to this point reads as follows: "It should be added that while this therapy was being continued, no local or other form of treatment was being carried out." It is thus quite obvious that this phase had been completely overlooked by the authors.

5. Another statement which needs correction: "While ultraviolet ray applications have given good results in some skin conditions and in rickets, we are not in a position to pass judgment on their effects on the calcium content of the blood, since we have not as yet tried it, nor have cases, to our knowledge, been observed for a very long period of time thereafter."

So much work has been done with ultraviolet irradiations in calcium deficiency diseases that to quote the list of investigators would require much space. The conclusion in practically every instance is that quartz light therapy increases and fixes permanently the blood calcium. We need only refer to the reports of Hess, Kramer and Tisdall, Huldschinsky and Woringer, among the many others.

Attention is called also to the fact that at no time has it been intended to convey the idea that the blood calcium content is the only one and essential factor in the causation of hyperesthetic rhinitis. We have in most instances called attention to the contributory etiology (Hollender, A. R.: The Contributory Etiology, Prophylaxis and Calcium Rôle in Hay-Fever and Asthma, *Am. J. Clin. Med.*, April, 1924), reference of which is here given.

The contention that thyroid substance is of value only in cretinism and acquired thyroid deficiency is an unwarranted limitation.

In our preliminary report, data are recorded to show that experimental work was conducted with calcium, thyroid, parathyroid, and ultraviolet irradiation, singly and in combinations, so that it is unnecessary to call attention to the desirability of such procedures. This phase was thoroughly contemplated at the very outset of the investigation, and the results recorded accordingly with proper control in every instance.

Finally, the contention that a low blood calcium has never been found by these authors must be contradicted by our experience. We have numerous accurately controlled calculations to show that the calcium content of the blood is invariably below the standard in hyperesthetic rhinitis.

FRANK J. NOVAK, JR., M.D.,
ABRAHAM R. HOLLENDER, M.D.
Chicago.

[The criticisms of Drs. Novak and Hollender were referred to Drs. Sonnenschein and Pearlman, who reply:]

To the Editor:—In Paragraph 1, the writers state that "it is neither reasonable nor scientific to establish a wide range of normality for the calcium content of the blood serum." Unfortunately, in the face of facts, it is impossible to establish a theoretical standard. Vines (The Parathyroid Glands in Relation to Disease, London, 1924), states very plainly that the amount of calcium present in the serums of normal individuals lies between 9 and 11 mg. per hundred cubic centimeters of serum, according to the methods of estimation used. This last phrase is of extreme importance, since our present-day methods of determining calcium content in the blood serum are not accurate. We are fortified in this statement by the opinions of leading laboratory workers and physiologists, among them Prof. A. J. Carlson of the University of Chicago. In their preliminary report (Novak and Hollender: THE JOURNAL, Dec. 15, 1923), workers are quoted whose findings on normal men varied from between 9.6 to 10.8 per cent. They then state that they have found the calcium content of serum in cases of hyperesthetic rhinitis *invariably* low, and give as their highest figure 9.8 mg. per hundred cubic centimeters of blood serum. The mere fact that an average of about 10 mg. is given shows that there must be many cases within a normal range which are considerably below or considerably above this amount in order to obtain such an average. Therefore it is not necessary that a case show exactly 10 mg. or thereabouts in order to be considered normal. Furthermore, we

cannot agree that a disease apparently accompanied by a lowered blood calcium content establishes a causal relationship between the disease and the lowered calcium content.

We wish to emphasize again that a considerable number of cases were examined by a number of leading laboratories, and in no instance did we find a diminished calcium content. Furthermore, personal communication with laboratory workers and a number of other rhinologists brought forth the statement that they also had not observed a definite diminution in the calcium content in cases of so-called hyperesthetic rhinitis.

With reference to Paragraph 2, we agree with the writers when they say that "the inefficiency of parathyroid substance is not and has not been disputed." Why, then, use it at all?

In regard to Paragraph 3, we beg to differ with the statement made which assumes that, because several workers had found a lowered basal metabolism in hyperesthetic rhinitis, this is an accepted clinical fact. Neither W. L. Simpson (Basal Metabolism in Hyperesthetic Rhinitis, *Laryngoscope* **32**:768 [Oct.] 1922) nor ourselves have found a reduction in the basal metabolism in hyperesthetic rhinitis, and we believe Dr. Novak himself was fair enough to state, after Dr. Simpson's work appeared, that apparently the basal metabolism was not diminished in hyperesthetic rhinitis. Thyroid therapy in hyperesthetic rhinitis is presumably used because of this lowered basal metabolism. We should like to state that in a wide range of reading and questioning we have never obtained the information that hyperesthetic rhinitis is common in endemic cretinism or induced hypothyroidism. Here, if in any condition due to deficient thyroid hormone (with its concomitant lowered metabolism), would we expect to see it. We feel, furthermore, that, except in the presence of very definite indications, thyroid should not be given any great length of time. Its use is by no means devoid of certain dangers.

We were our own worst critics in that we stated that our own clinical results were not of much value, since we also committed the error of using both local and general measures at the same time, or using more than one measure, whether local or general, at one time, and therefore we did not know to which one to ascribe good results that were obtained in certain cases. However, we did not overlook the statement made by Drs. Novak and Hollender: "But it should be added that while this therapy was being continued, no local or other form of treatment was being carried out." As a matter of fact, in that very paragraph, the authors say: "It was not, however, until the calcium and thyroid were combined that the therapy showed its true value." Even though no local or other form of treatment was being carried out, surely the use of two ingredients or of two measures at one time violates the principle that we consider essential in arriving at a scientific basis for treatment, namely, to use at one time only one therapeutic measure in order to see whether beneficial results are had or not. We have had cases in which one measure, such as the use of calcium chlorid alone either by mouth, applied locally in the nose, or given intravenously has afforded great relief, since it evidently acts as a depressant, at least temporarily. In other cases, as stated in our paper, the combination of four or five local and general measures failed to give relief in some instances.

With reference to Paragraph 5, we submit that there is surely a great difference between the pathology of rickets and that of hyperesthetic rhinitis, and it is only the latter that is under discussion. If a calcium deficiency is the cause of hyperesthetic rhinitis, why do we not see it more often associated with rickets?

In conclusion, let us state that we do not question the writers' clinical results. All we desire is to know the true facts regarding ultraviolet ray or any other therapy mentioned. If any of them give better results for the patients than do other means at our command, we will be happy to adopt them. We are not at all opposed to ultraviolet radiation but have simply felt that if it is the supposed calcium deficiency that is the reason for the use of the quartz lamp, this basis could be a firm one only if calcium deficiency is actually found in the blood serum of the majority of patients.

ROBERT SONNENSCHEIN, M.D.
SAMUEL J. PEARLMAN, M.D.
Chicago.

IMPROVEMENT IN THE INDIAN MEDICAL SERVICE

To the Editor:—Fifteen months ago you gave publicity to what was then regarded as a weakness in the Bureau of Indian Affairs as regarded its medical service. Other correspondents and myself contributed quite voluminously on this phase of the subject. I would now like to ask that you give equal publicity to the accomplishments that have been wrought in that department since that time, no doubt, in part at least, as the result of that publicity.

In 1923, I visited the Blackfoot Reservation and made observations there on trachoma as it occurs in this tribe, and performed many operations on the patients at the invitation of the physicians in charge. These observations were brought to the attention of the authorities in Washington. In the summer of 1924, I again visited this reservation and held clinics, to which seven of the physicians of the Indian Service were assigned. In January, 1925, I visited the Navajo Reservation in New Mexico and held clinics at the invitation of the officials of the Bureau of Indian Affairs. As the results of these visits and contact with the men in charge, I have become intimately acquainted with the very ambitious program that has been outlined by the government, which has for its purpose the rendering of every trachoma case inert from an epidemiologic standpoint within the year. The possibility of accomplishment of this objective is open to argument, but certain it is that this intensive form of treatment is justified by existing conditions.

Reports describing the general scope of the work as outlined by the Secretary of the Interior, Dr. Hubert Work, have been published in several quarters. In the release of Oct. 30, 1924, it was stated that the Indian Office now had seven ophthalmologists and thirteen nurses, who traveled about holding clinics, in addition to the regular force of physicians, several of whom were trachoma experts. The same document also gives the interesting information that the appropriation for the Indian Medical Service for 1925 was $500,000, as compared with $370,000 for the year 1924. This will certainly be gratifying to the complainants who have worked so hard for the betterment of the service, which can be obtained only with larger financial resources. It is not generally known, however, that at the meeting of the Board of Indian Commissioners at Lake Mohonk, Oct. 28, 1924, it was recommended that Congress should appropriate sufficient funds to enable the bureau to eradicate trachoma in one year from all Indian reservations, and that Commissioner Burke had directed that appropriate instruments for trachoma operations be purchased for all jurisdictions, and further that all the physicians in charge that did not already know these operations must learn to do them within a year or relinquish their places to others who would learn them. It is imperative that hospitals be built even of a temporary

character to aid the eradication of this disease. Those who have felt that the removal of this phase of the Indian Service to the Public Health Service cannot but realize that this is the better plan in that it avails itself of men and women already familiar with the patients, their racial peculiarities and their environment, and naturally makes for less discord within the reservations. My contact with the men of the service convinces me that they are highly enthusiastic over it and will cooperate to the fullest extent, thereby bringing about results pleasing to all.

L. WEBSTER FOX, M.D., Philadelphia.

INTRADERMAL VACCINATION

To the Editor: In your answer to the question as to the relative merits of the present intradermal method of vaccination, and its advantages over the old scratch method (THE JOURNAL, January 17, p. 223), you failed to mention that one of the chief advantages of the intradermal method is that it gives a much higher percentage of "takes" than vaccination by the so-called "incision" method. This point I (THE JOURNAL, Aug. 24, 1918, p. 654) proved rather conclusively as a result of a comparative study of the intradermal and "incision" methods at the time that I devised my original method of intradermal vaccination against smallpox. In my method I injected 0.1 c.c. of virus diluted with equal parts of sterile distilled water. Zinsser also makes note of this point in his most recent textbook of bacteriology (Hiss-Zinsser: A Textbook of Bacteriology, Ed. 5, 1923, p. 899). T. Twyman (*J. Missouri M. A.* **19**:353 [Aug.] 1922), using a diluted virus 1:4, came to the same conclusion because he states: "I injected and got a typical umbilicated pustule on persons who had been repeatedly vaccinated unsuccessfully by scratch or incision methods, yet only twice was I able to make ordinary vaccination take where I had previously injected and these two people had only one trial by injection."

Leiner and Kundratitz (*Ztschr. f. Kinderh.* **30**:205 [Sept.] 1921), Frankenstein (*Deutsch. med. Wchnschr.* **48**:1700 [Dec. 22] 1922), Singer (*Med. Klin.* **19**:1279 [Sept.] 1923), and Gettinger (*M. J. & Rec.* **120**:115 [Aug. 6] 1924) used Leiner's technic, and all of these workers agree, as you stated, that "there is an absence of pustulization and resulting ugly scar"; but that this conclusion is not true for all methods of intradermal vaccination is evidenced by the photographs of pustules shown in Twyman's article as well as my own. Leiner and Kundratitz, apparently from independent studies, modified the method used by me originally, in that they used a much greater dilution of the virus (from 1:3 up to 1:100), and their description of the process is as follows: "The real intracutaneous vaccination process, appearing in from ten to fifteen days, showed a sharp, distinctly circumscribed infiltration. It reaches its greatest extension after three days; its diameter varies from 20 to 30 mm.". At the beginning of his paper, Leiner states that "this method gave a vaccination reaction different from the cutaneous," and in another place he states that "the entire picture appeared in most cases like the area of cutaneous vaccination." None of the investigators who have followed the Leiner idea of injecting greatly diluted vaccine virus make any mention of vesicle or pustule formation, which, in my opinion, is one of the essential characteristics and advantages of any intradermal method of vaccination. Otherwise an interpretation of a successful vaccination might be very difficult if by chance there should be any question as to the potency of the virus used; and, as you state, "the absence of a readily visible scar" is not "an inconsiderable disadvantage."

LOUIS T. WRIGHT, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FELSOL

To the Editor:—Can you give me any information in regard to a powder known as Felsol? It is a supposed remedy to be used for the relief of asthmatic effects. This is being put on the market by the American Felsol Company of Lorain, Ohio. I am anxious to know whether you have investigated it, whether the preparation has any value in your eyes and whether it is considered ethical.

C. A. HARKNESS, M.D., Chicago.

ANSWER.—In the advertising of the American Felsol Company, Felsol is claimed to have the following composition: "Metozin 0.9 (containing Phenazon 0.25, Anilipyrin 0.4 Jodopyrin 0.25), caffein 0.1, digitalis and strophanthus glycosids 0.0015 and the alkaloid of lobelia inflata 0.005."

Felsol is a typical illustration of an irrational shotgun mixture. One of the claimed ingredients, metozin, is stated to contain phenazon (antipyrin), anilipyrin (a mixture of antipyrin and acetanilid) and iodopyrin (a compound of antipyrin and iodin). In addition to these multiple antipyretic ingredients, the product is claimed to contain four other active drugs, namely, caffein, glucosids (glycosids) of digitalis and strophanthus and the alkaloid of lobelia.

The circular does not state the kind of digitalis glucosid contained in the product, and "lumps" the amount of digitalis and strophanthus glucosids. According to the circular, Felsol "gives the busy physician a handy, convenient and harmless remedy which may be given for any kind of bronchial or cardiac asthma, without the necessity on the part of the physician to embark on long theoretical considerations as to the underlying cause of the attacks." A product that contains preparations of digitalis, strophanthus and lobelia is not a "harmless" remedy. The recommendation for the indiscriminate use of this product is to be strongly condemned.

ONE CHILD STERILITY

To the Editor:—Is there any special reason for a woman having had one child to be unable to become pregnant again? The only cause I can think of for "one child sterility" is injury at childbirth, such as would result in malposition of the uterus or laceration of the cervix with consequent endocervicitis.

W. H. PEDLEY, M.D., Scotsguard, Sask.

ANSWER.—In cases of "one child sterility," both partners to the marriage should be studied as carefully as in any other case of sterility. The injuries of childbirth, added to a relative infertility from other causes, may determine complete sterility. Below are references to the subject. The Association Library will lend a package library on sterility to Fellows of the Association and to individual subscribers to THE JOURNAL:

Macomber, Donald: One Child Sterility, *Boston M. & S. J.* **188**:729 (May 10) 1923.
Meaker, S. R.: Use in Sterility of Antispasmodic Drugs in Combination with Transuterine Insufflation of Gas, THE JOURNAL, June 28, 1924, p. 2098.
Curtis, A. H.: Progress in Relief of Sterility, *Am. J. Obst. & Gynec.* **8**:123 (July) 1924.
Reynolds, Edward; and Macomber, Donald: Defective Diet as a Cause of Sterility, THE JOURNAL, July 16, 1921, p. 169.
Reynolds, Edward; and Macomber, Donald: Fertility and Sterility in Human Marriages, published by W. B. Saunders Company, West Washington Square, Philadelphia.

PROCAIN DERMATITIS

To the Editor:—I have a patient, a dentist, who has what is evidently a trade dermatitis. This was attributed to novocain, and its use was discontinued with no apparent benefit. He then used butyn, and there was an exacerbation of the eczema. Will you kindly tell me whether butyn and novocain are cocain derivatives or are they synthetic preparations? Also, will you suggest some local anesthetic to use in the place of the drugs named.

H. S. GEIGER, M.D., Kissimmee, Fla.

ANSWER.—Procain (novocain) and butyn are not derived from cocain. They are synthetic chemicals. The use of saligenin might be suggested. According to New and Nonofficial Remedies, 1924, p. 38, saligenin is a local anesthetic similar in action to procain, which is said to be as effective as procain but much less toxic.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 3. Sec., Dr. Harry C. De Vighne, Juneau.
MAINE: Portland, March 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State Street, Portland.
MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Charles E. Prior, 144 State House, Boston.
MISSOURI: St. Louis, Feb. 24-27. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.
NEW HAMPSHIRE: Concord, March 12-13. Sec., Dr. Charles Duncan, Concord.
PORTO RICO: San Juan, March 3. Sec., Dr. D. Biascoechea, Box 804, San Juan.

Arkansas November Examination

Dr. J. W. Walker, secretary, Arkansas Board of Medical Examiners, reports the written examination held at Little Rock, November 11-12, 1924. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Nine candidates were licensed by reciprocity. The following colleges were represented:

PASSED — College	Year Grad.	Per Cent.
Birmingham Medical College	(1911)	81.5
Washington University	(1923)	84.3
Memphis Hospital Med. College	(1900, 2) 78.3, 79.6, (1903, 2)	77, 78.9
Vanderbilt University	(1924)	88.9

FAILED — College	Year Grad.	Per Cent.
University of Arkansas	(1910)	*

LICENSED BY RECIPROCITY — College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1915)	Mississippi
College of Physicians and Surgeons, Chicago	(1906)	Oklahoma
Tulane University	(1923)	Louisiana
St. Louis University	(1905)	Missouri
Jefferson Medical College	(1913)	Mississippi
Meharry Medical College	(1924, 2)	Tennessee
University of Tennessee	(1921), (1923)	Tennessee

* No grade given.

Maine November Examination

Dr. Adam P. Leighton, Jr., secretary, Maine Board of Registration of Medicine, reports the written examination held at Portland, November 11-12, 1924 The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Fourteen candidates were examined, all of whom passed. Five candidates were licensed by reciprocity. The following colleges were represented:

PASSED — College	Year Grad.	Per Cent.
Boston University	(1924, 3) 82, 86, 90	
Harvard University	(1924)	81
Tufts Coll. Med. Sch.	(1906) 76, (1921) 81, (1922) 80, (1924)	82
Columbia University	(1920)	84
McGill University	(1924, 2)	78, 79
University of Toronto	(1917) 75, (1924)	85
Comenian University, Czechoslovakia	(1915)*	81

LICENSED BY RECIPROCITY — College	Year Grad.	Reciprocity with
Harvard University	(1903)	Penna.
University of Vermont	(1909)	New Hampshire, (1923, 2) Vermont
Laval University Faculty of Medicine, Montreal	(1907)	Vermont

* Graduation not verified by A. M. A.

Nevada November Examination

Dr. S. L. Lee, secretary, Nevada Board of Medical Examiners, reports the written examination held at Carson City, November 3-5, 1924 The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Nine candidates were licensed by reciprocity. The following colleges were represented:

PASSED — College	Year Grad.	Per Cent.
Medical School of Maine	(1890)	81.8
Columbia University	(1921)	87.2
Long Island College Hospital	(1914)	89.7
University of Berlin, Germany	(1922)*	86.2

LICENSED BY RECIPROCITY — College	Year Grad.	Reciprocity with
Chicago Homeopathic Medical College	(1899)	Illinois
Rush Medical College	(1894)	Illinois
State University of Iowa College of Medicine	(1897)	Iowa
Ensworth Medical College	(1904)	Washington
St. Louis College of Physicians and Surgeons	(1888)	Missouri
University Medical College of Kansas City	(1900)	Kansas
Washington University	(1918)	Utah
University of Texas	(1922, 2)	Texas

* Graduation not verified by A. M. A.

Medical Economics

THE SUPPLY OF RURAL PHYSICIANS

The editorial comments published in THE JOURNAL, and the series of articles now appearing by Dr. William A. Pusey on the supply of physicians for rural districts, have aroused great interest in our readers. Numerous letters have been received, from which a few have been selected as of especial interest.

A General View

To the Editor:—I cannot refrain from taking exception to the articles relative to the scarcity of physicians in rural communities by Dr. Pusey, when I find that the data submitted are inaccurate and the conclusions taken from them erroneous. A correct understanding of the real situation with the economic adjustment involved would find the rural districts in far better shape medically than they were twenty years ago. I do not say that there are more physicians in these communities now than there were twenty years ago, but those physicians who are there, I find, are better equipped professionally. Owing to the automobile and good roads, they are able to see more sick patients during a given time than formerly. My duties as medical inspector, for one of our largest life insurance companies, have caused me to make personal surveys by automobile in all towns having physicians in the following states: Kansas, Arkansas, Missouri, Iowa, Oregon, Ohio, Washington, part of Idaho, Michigan, Illinois and New Jersey. There are some towns in each of these states where physicians could be used to advantage and in which they could, by working day and night, keep the financial wolf from the door. However, physicians of ambition who have yielded to the layman's call and settled in these places have usually found not enough patronage and income to warrant their remaining. It is too easy for the urbanite to take himself to the city, with the good roads and automobiles, or telephone for the city physician to come to him. As to economic laws, the physician has followed the rural population to the cities. Improved machinery for farming large tracts of land with little manual labor, and increase in demand for higher paid labor in the cities have depleted the strictly rural population. Because of these changes, and in them, we find the explanation of the seeming scarcity of physicians in rural sections.

Just an explanation before I close as to what I meant by inaccurate data. On page 282 of the January 24 article, Dr. Pusey says that "Sussex County, N. J., which formerly had one or two physicians, now has none." I made a personal survey of this county two months ago, and at that time, there were twenty-two physicians in the county. The largest city or town is Newton, the county seat, and only seven of these twenty-two were in this city. I have covered the entire state of New Jersey by automobile, and I know of no county in the entire state with a situation so desperate as mentioned.

I agree with the findings of the General Medical Board of the Rockefeller Foundation that "the shortage is dependent on social and economic conditions which cannot be overcome by any policy under the control of the medical profession, or medical educators in particular."

CLIFTON M. ROSIN, M.D., New York.

[NOTE.—According to the records of the directory department of the American Medical Association, Sussex County has twenty-seven physicians distributed as follows: Branchville, 2; Franklin, 3; Hainesville, 1; Hamburg, 3; Newton, 10; Sparta, 1; Stanhope, 1; Stillwater, 1; Sussex, 4, and Vernon, 1.—ED.]

State Employed Physicians

To the Editor:—I have reviewed the special article in the last issue of THE JOURNAL by Dr. W. A. Pusey, on the scarcity of physicians in the rural districts of some states. During the last seven years I have been on active duty with the U. S. Veterans' Bureau at Atlanta, Ga. Throughout this entire period I took advantage of several opportunities in interviewing physicians in person, indirectly and by mail in an attempt to find a good location for the general practice of medicine. I received information from nearly every sector in the fifth district. I desired to know about a good vacancy, since I did not intend to make government work my permanent profession. I was advised in nearly 100 per cent. of the rural districts in need of a physician that the financial conditions were so depressed that it was impossible for a physician to exist. In the majority of these locations doctors have attempted to become established, but were forced to move to avoid starvation. It is true that physicians were badly needed in these localities. I recall in a specific instance when I returned from Atlanta by automobile I overtook a man carrying a boy about 10 years of age. He had three other children with him. He told me that he had been 30 miles to see a doctor at a mill. This was the nearest physician to the little village. The boy undoubtedly had typhoid fever. It was a sad state of affairs. I believe that the only way these conditions can ever be handled is for the Public Health Service to enlarge its commissioned medical personnel and assign physicians to these isolated districts. So far I have never been able to obtain any argument against such a procedure other than political.

I do not desire to criticize Dr. Pusey's report, since I believe he has investigated the condition as far as lack of physicians is concerned. I do not believe he has given the reason why physicians have not located or remained after locating sufficient consideration.

S. S. BEVERLY, M.D., West Toledo, Ohio.

Difficulties of Rural Practice

To the Editor:—As I am interested in the articles appearing in THE JOURNAL on the rural physician, I feel like saying a few words. There are some conditions, perhaps unavoidable, that make practice in small towns undesirable: 1. The ease and rapidity with which patients reach larger centers—even 10 to 20 miles away—by automobile. 2. The group clinic, which presents such advantages to the patients as (*a*) the fact that some one is always there; (*b*) better equipment of office, laboratory, roentgen ray, etc.; (*c*) men who have more experience. 3. The snobbish contempt in which the man in a small town is sometimes held. 4. The universal experience now that the physician loses his patient as soon as he takes him to a hospital—if he is not on the staff—which works a greater hardship the smaller the town. 5. The frequency with which another member of the family he introduced to the specialist is seen in the same consultation or operating room without his knowledge. 6. The utter impossibility of any man to keep mentally fit, hand trained and office equipped to do special or unusual work—such work as is now considered by everybody to be the patient's right to receive. Another—the financial—drawback has been mentioned. This group, as I see it, includes the most vital reasons why so many country places are without physicians, and the end is not yet.

G. H. VAN DYKE, M.D., Winona Lake, Ind.

More Hospitals the Cure

To the Editor:—Any sane man would hesitate on presuming to offer a solution for the problem of "Medical Education and the Supply of Rural Physicians" (THE JOURNAL, January 3, p. 40), but one wonders why the powers that be, such as the General Education Board and the International Health Board, do not hit on the happy idea of interviewing rural practitioners who have not fled the field, drawn by the lure of the superior financial, social and professional advantages of the city. They might learn that some of these "unfortunates"—to give credence the impression your editorial conveys that such they are—are not there because they can't raise enough thunder to get away, but by choice, preferring to live where "you know everybody and everybody knows you," and where "keeping up with the Joneses" deceives only the chief actors and none of the spectators. They might also learn that the heaviest cross these unfortunates have to carry is not their lack of social advantages but to have to practice a difficult art under most unfavorable circumstances. A housewife without a kitchen is little less handicapped than a physician without a hospital. But to provide hospitals, even one to a county and even small ones, not necessarily of marble or Bedford stone, would be doing something definite! It would, of course, solve the problem; but it is so much easier to have conferences and belabor the atmosphere with words than to go to some of the nation's philanthropists and frankly state the case to them and let them provide the means needed.

P. W. VAN METRE, M.D., Rockwell City, Iowa.

The Cause Is Financial

To the Editor:—The lack of physicians in rural districts is due to the fact that these places will not pay a living return to a doctor. Thousands of doctors would prefer to live in the country if they could make a living there. Lowering the educational requirements would not help the condition in any way. However, the situation need give no one concern. I do not think there is a place in the United States that is suffering for lack of medical attention. In fact, I am honestly of the opinion that people who live in the country get better medical attention in the aggregate than do those living in the large centers. The struggle for existence caused by overcrowding of the profession in the cities, with the malpractice of the cultists and faddists, results in poorer service than does the scarcity of physicians in the country.

There is widespread dissatisfaction among medical men. In the final analysis, this is found to be due to two things: inadequate financial returns and loss of prestige.

C. L. HOOPER, M.D., Manter, Kan.

Improvement in Preventing Disease

To the Editor:—There has been of late a lot of writing concerning the lack of rural practitioners, and a lot of good reasons have been given; but I believe that one or two factors have been overlooked.

In previous days, when sanitation was not so good as now, typhoid was a great deal more common. A physician in those days would treat perhaps a dozen cases of typhoid fever when he treats one now. Education, sanitation and vaccine are responsible. Malaria was then very frequent. Now one goes for several years without seeing a case of malaria. The bowel infections of infants and children incident to summer months have been so reduced that one does not see one severe case where there were a dozen or more ten or fifteen years ago.

The factors mentioned are sufficient to reduce the work of the country physician at least 50 per cent., and the people have not in the districts with which I am familiar been educated to the point where periodic health examinations compensate. Many of them regard that sort of thing as a means manufactured by doctors for getting a little more money, and do not indulge. In former times, less adequate means of transportation and bad roads together made it impossible for a physician to see as many patients as he can now see, and that was a factor creating a need for more physicians to perform a given amount of work.

I do not believe that the reduced number of physicians in rural sections is so serious a matter as some seem to believe. A lot of the clamor has come from towns which formerly had from one to three physicians and now have more. I have an illustration in mind. An Illinois town of about 400 population formerly had from two to three physicians, and now there are more.

G. H. PARMENTER, M.D., Beecher, City, Ill.

Pan American Child Welfare.—An International American Bureau of Child Welfare was recently established in Montevideo, Uruguay. This bureau, provided for by the second and fourth Pan American congresses, will deal with child welfare matters of interest to all the American countries.

Book Notices

PUBLIC HEALTH ADMINISTRATION AND THE NATURAL HISTORY OF DISEASE IN BALTIMORE, MARYLAND, 1797-1920. By William Travis Howard, Jr., M.D. Paper. Pp. 565. Washington: Carnegie Institution of Washington, 1924.

This is, if we mistake not, the first attempt at a complete critical and historical study of health conditions and public health activities in an American city. It is to be hoped that it is the forerunner of other studies of a similar character. The volume before us, which contains a carefully prepared record of the available data on diseases in Baltimore, in many ways sets a high mark of achievement. It is comprehensive, well written and definitely organized; the statistical analyses are in the main illuminating and not too elaborate; the work throughout is informed by first-hand knowledge and high professional standards. Some minor criticisms may be made. The author's point of view in some of his discussions reveals a certain familiar environmental influence. He wishes to make it so plain that not all the improvement in public health in the last half century is due to "the discoveries of modern microparasitology" that it will be the opinion of many that he somewhat overdoes it. We read that "the only positive evidence adduced indicates unmistakably that the rise and fall in the rate for tuberculosis in Baltimore during the 109 years embraced in this study have been determined above all other factors by natural selection" (p. 417). And again, "Critical analysis of recorded data indicates that the observed changes in the death rate from tuberculosis have not been appreciably influenced by improvements in general sanitation or by restrictive and other measures applied to persons and their environment since 1910" (p. 535). Granting that his largely imaginary opponents exaggerate, is his own position much better based? The book is well printed but the proof reading far from faultless: one encounters "goal" fever (p. 101); and on pages 43 and 44 as many as four proper names are misspelled. Stimulated, perhaps, by illustrious example, the author adopts the obsolete word "modernly," and uses with great frequency the awkward "contactive" and "contactively." Why not "typical contact diseases" instead of "typically contactive?" A really serious omission is the lack of an index, which would be particularly useful in a book of this type.

KINDERHEILKUNDE. Von Dr. Richard Lederer, Privatdozent für Kinderheilkunde an der Universität Wien. Paper. Price, 65 cents. Pp. 160, with 25 illustrations. Berlin: Julius Springer, 1924.

This little volume is devoted to a consideration of the constitutional pathology in infancy and childhood. A new interest has been awakened in this subject, particularly since the publication of Julius Bauer's book in 1917. Lederer has attempted to interpret some of the diseases of young life on the basis of constitutional pathology. It is obvious that the relation of the constitution to disease in every stage of life is of the utmost importance from the standpoint of etiology and pathogenesis. To know the endogenous or fundamental conditions of the structure of the cells and organs would be of inestimable value. One reads the book, however, with a feeling of skepticism. It is true that the material is suggestive. It is not all speculation. Nevertheless, the feeling remains that proof is not adequate. Further progress, more advanced medical thought, may show that Julius Bauer and Richard Lederer were in advance of their time and failed to be fully appreciated by their contemporaries. Lederer defines the pathology of constitution as a condition in which specific characteristics are transmitted by the germ plasm. He emphasizes the point that those changes which occur as the result of intra-uterine or extra-uterine influences, or which are due to climate or diet or improper care, should be designated by the term "condition." He also points out that anomalies of dentition and static development may depend on constitutional factors, and these may be independent of rickets. He believes that asthma of infancy is an expression of hyperexcitability of the vagus and is constitutional in origin. He sees a constitutional disposition in the occurrence of rickets because certain mineral constituents of the organism deviate from the normal as the result of some fundamental anomaly in the structure of cells. The same line of reasoning he would apply to spasmophilia and the neuropathic and psychopathic constitution.

A TEXT-BOOK OF PHYSIOLOGY. By H. E. Roaf, M.D., D.Sc., M.R.C.S., Professor of Physiology at the London Hospital Medical College, University of London. Cloth. Price, $8.50 net. Pp. 605, with 325 illustrations. New York: Longmans, Green & Co., 1924.

To discourage cramming on the part of the student, Dr. Roaf has adopted a novel method of presenting the subject matter of physiology. He first introduces the student to the applications of physics to physiology. Here he discusses the frame and body movements, muscle action, heat and electrical changes in muscle, and the mechanics of respiration and of circulation. Under chemical aspects of physiology, the subjects of foods, digestion, metabolism, blood chemistry, excretion and secretion are presented. The student is now prepared to consider more complicated biologic activities, such as the physiology of the nervous system and of the special senses, the regulation of temperature and the integration of the various systems in respiration and metabolism. The final chapters are devoted to processes of growth, repair, reproduction, heredity and relations of the body to its environment.

DIE CHIRURGIE DES VEGETATIVEN NERVENSYSTEMS. Von Dr. F. Brüning, a. o. Professor der Chirurgie an der Universität Berlin, und Dr. O. Stahl, Privatdozent, Assistent der Chir. Univ.-Klinik der Charité Berlin. Paper. Pp. 235, with 72 illustrations. Berlin: Julius Springer, 1924.

The authors request the reader not to view this monograph as a finished building in which only a few of the inner details are lacking, but as the ground plan of an edifice whose final appearance depends on the experience of the future. They have compiled, however, an encyclopedia of the present status of our knowledge of the surgery of the vegetative nervous system. The observations and theories of more than 1,100 contributions to the subject (which include those up to August, 1924, and which have been carefully listed in the bibliography), together with their own extensive experience, have been submitted to a careful and judicial study. The writers designate as the "vegetative nervous system" all the ganglion cells and nerve fibers that enervate smooth musculature, heart and glands. The history, embryology, anatomy, histology, physiology and pharmacology are discussed in the light of the most recent knowledge of these subjects. The section dealing with the cervical sympathetic is of particular interest. After a complete classification of the various operative procedures in this region, the authors give a detailed account of the Jonnesco technic for the extirpation of the cervical sympathetic, together with its three ganglions and the first thoracic ganglion. The latter description is amplified by colored illustrations. Resection of the rami communicantes and of the nervus depressor are described. In the discussion of angina pectoris, the authors feel that the preponderance of opinion supports the idea that the sympathetic is the principal sensory nerve of the heart and aorta, and they take issue with Wenckebach, and Eppinger and Hofer, who believe that the nervus depressor is the sensory nerve of the aorta. They say that if the depressor nerve is considered the principal sensory nerve of the heart, then the clinical observations cannot be explained, as there is no communication between the depressor and the spinal cord at the arm segment level. The postulate that the depressor is the principal sensory nerve of the heart is incompatible with the clinical facts of the frequency of radiated pains. The explanation of the favorable effect of the depressor operation is, in their opinion, that it does not depend on the cutting of the parasympathetic depressor paths but of the sympathetic paths which travel in the depressor nerve. They feel that section of the depressor severs a relatively small number of the sensory paths, the remainder going through the ganglion stellatum, and that the favorable results of the section are due to a lowering of the general tone from the severing of a few fibers. While many successful cases of operative intervention in angina pectoris are enumerated, the authors feel that surgery is never indicated unless all efforts by means of

internal medication have failed. But should this be the case, the most radical operation should be performed. The entire left cervical and first thoracic sympathetic should be resected. To this may be added a periarterial sympathetomy of the common carotid and vertebral arteries, together with the isolation of the fibers—including the depressor—which traverse the vessel sheath. Cervical sympathectomy is not suitable for bronchial asthma, epilepsy, glaucoma, migraine or trifacial neuralgia. In exophthalmic goiter it is to be used only when the exophthalmos is of such high grade that the cornea is endangered. The operation of periarterial sympathectomy is described in detail. Its indications and values are then discussed in vasomotor-trophic disturbances after nerve injuries and other or unknown causes; causalgia; vasomotor-trophic disturbances in amputation stumps; traumatic edema; vasomotor-trophic disturbances after freezing or diseases of the spinal cord; trophic sores of unknown origin; skin diseases; intermittent claudication; endarteritic and arteriosclerotic gangrene; diabetic gangrene; roentgen-ray burns; ulcus cruris; delayed union of fractures; bone and joint tuberculosis; chronic rheumatic joint affections, and insufficient function of the endocrine glands. The final chapters deal with operations on the sympathetic nerves which run in the spinal nerves, and the surgery of the vagus. There is a serviceable index. It is to be regretted that the recent contributions of Hunter and Royle were too late to be included in this work other than merely to be listed in the supplemental bibliography. The work of Kanavel, Pollock and Davis is too recent even for that.

A REFERENCE HAND-BOOK FOR NURSES. By Amanda K. Beck, R.N., Graduate of the Illinois Training School for Nurses. Fifth edition. Cloth. Price, $1.50 net. Pp. 288, with illustrations. Philadelphia: W. B. Saunders Company, 1924.

The title page states that this volume is the fifth edition, reset. In the description of "the most important drugs," insulin, arsphenamin, the newer antiseptics and the more valuable anthelmintics are omitted. The curative and prophylactic doses of diphtheria antitoxin are too small. No mention is made of tetanus antitoxin. The chapter on the feeding of infants and children needs extensive revision, as do the conraindications to breast nursing. The differentiation of chickenpox and smallpox should be left to the physician, who will know more than to decide on the one criterion here offered, pricking the vesicle. For resuscitation of those nearly drowned, the Schäfer method should be included, and the two methods described should be omitted. The entire field of books on nursing seems to require a review, with the establishment of a few standard textbooks.

SERO-, VACCINE- UND PROTEINKÖRPERTHERAPIE. Von Dr. Med. et Phil. Bruno Busson, Privatdozent an der Universität Wien. Paper. Price, 60 cents. Pp. 70. Vienna: Julius Springer, 1924.

The author seems to proceed on the assumption that practicing physicians are to take all serums, vaccines and various forms of protein therapy pretty much at their label or face value. Thus, he says about antipneumococcus serum (p. 31), "We use it in all diseases that are caused by *Pneumococcus lanceolatus*, such as pneumonia or consecutive pericarditis, pleuritis, meningitis and ulcus serpens. The earliest possible use is indicated." This reminds one of commercial advertising. The book is one of a series on various medical topics issued with the cooperation of members of the Vienna medical faculty, but nevertheless it is superficial, anachronistic and worthless.

APPLIED ANATOMY. The Construction of the Human Body Considered in Relation to Its Functions, Diseases and Injuries. By Gwilym G. Davis, M.D. Revised by George P. Muller, M.D., Professor of Clinical Surgery in the University of Pennsylvania. Sixth edition. Cloth. Price, $9. Pp. 638, with 656 illustrations. Philadelphia: J. B. Lippincott Company, 1924.

The revision of Dr. Davis' standard textbook of applied anatomy has been made by Dr. Muller to include such new surgical procedures as are based on anatomic relations. These include cervical sympathectomy, the Billroth I and Billroth II operations and the Polya procedure. The description of the operations for tic douloureux, harelip and thyroidectomy have been rewritten.

Miscellany

REPORT OF MINERS' PHTHISIS BUREAU

The Miners' Phthisis Medical Bureau of the Union of South Africa made 33,927 clinical examinations and investigations, an average of 112 for each working day, during the year ending July, 1923. The bureau then had medical and roentgenographic records of 47,518 men of European extraction. During the year, 337 miners were admitted to the wards to clear up doubt, in practically every instance, as to the existence of pulmonary tuberculosis. In 102 instances tuberculosis was discovered, and in eighty-one it was complicated by silicosis. The pathologist examined 292 pairs of lungs. The rule was that silicosis is considered present only when it can be recognized with certainty by unaided vision and touch after cutting open the lung. A microscopic examination of the lungs of all adults usually shows a number of minute areas in which a few silica particles, associated with the essential changes of simple silicosis, can be found, and for this reason the verdict of the pathologist as to the presence of silicosis must be arrived at without the microscope. Clinical observation has shown that no detectable impairment of function exists unless the affected areas are sufficiently large and numerous to be visible and palpable post mortem. Simple silicosis is distinguished from that common condition in which a few microscopic areas of silicotic changes are present by (1) the presence of these areas in large numbers, and (2) the development of the individual areas to more than microscopic size. The latter change appears to be, in many instances, the result of a peculiar form of tuberculosis generalized throughout the lungs, although unless other indications of tuberculosis subsequently appear, the condition is considered still to be simple silicosis. Of the 292 lung specimens, ninety-eight were from miners, and of these, silicotic changes were present in sixty-nine. Forty-five of these sixty-nine persons had been certified during life to be in various stages of silicosis and had been compensated by the bureau. In twenty-two of these forty-five beneficiaries, it was found that silicosis was not the cause of death, and not even a contributory cause. Of the ninety-eight miners examined post mortem, silicosis contributed to the cause of death in thirty. This is significant in view of the proposal to compensate all miners after a certain number of years of service; five years has been suggested. Of the twenty-nine miners in whom no signs of silicosis could be discovered post mortem, one had never worked underground; twelve had worked in mines from two years and four months to six years; sixteen had worked underground more than six years; seven had more than nine years' service to their credit, two more than twelve, and one more than sixteen.

Among 12,691 miners examined periodically during the year, twenty-five were found to have pulmonary tuberculosis without detectable silicosis, a rate of incidence of 196 per hundred thousand; 5,512 men have been employed as miners after passing a physical examination, and of these ten have developed pulmonary tuberculosis, all in the open form. Simple silicosis can be ascertained roentgenographically with a high degree of certainty; but the presence of slight silicotic changes, if associated with tuberculosis, is not always discovered roentgenographically. A patient who appears to have simple tuberculosis may be found, post mortem, to have a silicotic element also. It is necessary, therefore, for all miners who have been certified as having simple tuberculosis to be examined post mortem, for the discovery of a silicotic element, under the law, places the dependents on the same footing as if the deceased had died of silicosis. Among the 12,691 working miners examined periodically during the year, in 406 simple silicosis was discovered, or had been discovered previously, 257 of them originating during the year. Silicosis was first detected in the anteprimary stage in 202 of these, and in the primary stage in two.

Should the miner give up mining in favor of some other occupation when silicosis declares itself? Theoretical considerations are all in favor of his immediate retirement;

otherwise he faces the danger of acquiring tuberculosis. But the opinion has frequently been expressed in these annual reports that most cases of simple silicosis owe their earliest detectable deveolpment to an occult tuberculosis. A study of the subsequent history of the cases this year leads to the conclusion that when simple silicosis once declares itself, the future course of the disease is not markedly benefited by relinquishing underground work. Whatever deductions may be drawn as to the advantage to the patient of abandoning mining, his prompt retirement is advantageous to his fellow workers, for before the next periodic examination, he may develop an open case of tuberculosis and a real danger to his associates.

EXTREME NEUTROPHILIC LEUKOCYTOSIS; SIMPLIFIED ARNETH COUNT

A case of extreme leukocytosis (120,000 leukocytes per cubic millimeter) occurring in an infected, bleeding carcinoma of the breast is reported by C. Pons and E. B. Krumbhaar (*J. Lab. & Clin. Med.* **30**:123 [Nov.] 1924). Several factors were held to be responsible for the leukocytosis: (*a*) the cancerous growth; (*b*) superficial infection; (*c*) antemortem leukocytosis, and especially (*d*) hemorrhage. A simplification of the Arneth scale is recommended for routine use as an indication of the age of the leukocyte. The authors believe that the essential clinical purpose is served if all neutrophils are subdivided into: (1) metamyelocytes (very young) with round or slightly indented nuclei; (2) nonsegmented forms (young) where the nuclear material is connected by broad bands, and (3) segmented forms (older) where two or more groups of nuclear material are joined by narrow filaments. As metamyelocytes, like their immediate ancestors, the myelocytes, are usually segregated in a differential count from the riper cells of the granulocyte series, this necessitates the formation of only one extra group for routine work. In the case reported, the number of polymorphonuclear neutrophils with unsegmented nuclei varied from 82 to 84 per cent. of the total count, as against the normal of from 4 to 10 per cent. A shift in this direction, though not to such an extreme degree, has regularly been noted by the authors in cases in which the polymorphonucleosis is of recent occurrence. It is taken to indicate the response of the leukopoietic tissues to the demand for more leukocytes, whereby relatively younger cells emerge in the peripheral circulation. Such a very high percentage of unsegmented forms is, of course, almost as unusual as is the total count itself, the usual increase of these forms in the ordinary leukocytosis being to about 30 or 40 per cent.

COLONIES FOR THE TUBERCULOUS

The results obtained in England in the treatment of tuberculous persons in training colonies was the subject of the Tenth Annual Conference of the British National Association for the Prevention of Tuberculosis, held in London in July, 1924. A visit of inspection was paid the Burrow Hill Training Colony. Training colonies are of three kinds: (1) the farm colony, where the emphasis is placed on extending sanatorium treatment; (2) vocational training colonies, where the preparation for a safe vocation is stressed, and (3) the village settlement, intended as a permanent location for the tuberculous patient and his family. Colony facilities have been considerably expanded because of the acute problem of the tuberculous ex-soldier. Each type of colony has its shortcomings and its defenders. Common problems have been the necessity of selecting suitable patients, as regards both the clinical stage of their disease and their adaptability to colony life, and the economic pressure on the patient to meet the needs of his family.

When the chief aim has been to afford a longer period of supervised treatment, the patient at the end of his training period may return to unsuitable employment. When vocations are taught it is still difficult to transfer a weak member of society to a comparatively new occupation. Often discharged persons have been placed in industries unrelated to those taught them at the colony. With the present vast amount of unemployment in England, it is almost impossible to place discharged colony patients in industry. A Cheshire training colony is reported as unable to produce economically, with colony labor, although there was no overhead expense to be met. The village colonies were critized because of the possibility that a patient might infect the members of his family.

Medicolegal

Life Insurance—Declarations of Insured—Expert Testimony

(Priest v. Kansas City Life Ins. Co. (Kan.), 227 Pac. R. 538)

The Supreme Court of Kansas, in reversing a judgment which the beneficiary recovered on a policy of insurance on the life of a physician, and ordering a new trial, says that a number of physicians who were called as witnesses were asked to give their opinions as to the physical condition of the insured prior to his applying for this policy. Wherever such an opinion was founded in part on the history of the case furnished by the insured, an objection to its admission, interposed on that ground, was sustained. Ordinarily, expert testimony concerning the condition of a person is not admissible when it is partly based on his statement of past events. But that rule has usually been applied where the subject of inquiry was the extent of injuries suffered by one seeking damages from a defendant responsible therefor, and where a different practice would in effect enable the plaintiff to avail himself of his own self-serving declarations. It is based on the principle that, since the physician cannot testify to what the plaintiff told him, he should not be allowed to bring about practically the same effect by giving a conclusion of his own founded on statements he would not be permitted to repeat. Again, the weight of authority appears to be that declarations made by the insured concerning his health are not admissible against the beneficiary to show the falsity of representations made in the application. But a distinction is made, which this court regards as sound, in favor of their admissibility on the issue of the insured having knowledge of such falsity. In the present case, testimony of what the insured had said about his health was freely admitted on both sides. As the physicians who testified concerning his condition might have repeated what he had said to them on the subject, this court sees no objection to their giving opinions even though they were to some extent influenced by his history of the case. In other words, the court holds that, in an action on a life insurance policy, in which the defense is that the insured in his application knowingly misrepresented his state of health, expert medical testimony concerning his condition at that time may be introduced by the defendant, although in part based on the insured's own history of his case.

There was evidence tending to show that the agent through whom the application was made knew that the insured was seriously ill, but desired to have a policy issued to him because of his prominence, for the influence it would have on other prospects. There is some difference of opinion whether an insurance company is chargeable with knowledge of an applicant's condition obtained by its medical examiners or soliciting agent. But, assuming the imputed knowledge rule to apply to them as well as to other agents, it does not extend to cases in which answers are given by the applicant which he and the agent both know to be false, at least when the agent in question has no authority to determine finally whether a policy shall be issued on the application, for the company may not in this manner be made the victim of collusion between its representative and the applicant.

The policy contained the familiar provision that it should not take effect "unless the applicant is in good health at the time of its delivery." This court does not interpret this to mean that no contract of insurance results if the insured at the time he made his application suffered from an ailment of which he was not conscious and which still existed when he received the policy. Where without misrepresentation on the part of the applicant an insurance company after due

investigation accepts the risk, and a necropsy reveals that the seeds of a fatal disease existed before the acceptance, the clause referred to will not avail to defeat the collection of the policy. Although a different view is sometimes taken, this court considers the purpose and effect of the clause to be to protect the company against a new element of risk through a change in the condition of the applicant, occurring after the company's investigation has been made.

"Hospital" and "Home for the Aged" Differentiated

(People ex rel. Frax Realty Co., Inc., v. Kleinert, Building Superintendent (N. Y.), 205 N. Y. Supp. 728)

The Supreme Court of New York, Special Term, Kings County, says that the only question involved in this case was whether an institution known as the Swedish Augustana Home for the Aged was a hospital, within the meaning of a provision in a building zone resolution that no garage for more than five cars might be erected within 200 feet of any hospital maintained as a charitable institution. No doubt, dictionary definitions of the word "hospital" can be produced broad enough to include a home for the aged; but the ordinary meaning of the word, in common usage, dose not include such an institution. In common usage, a hospital is an institution maintained for the purpose of providing a place to which persons may resort for medical or surgical treatment. The inmates may be treated by physicians or surgeons employed by the hospital, or by those of their own selection, while the incidental nursing is usually provided by the hospital; but in any case the fundamental idea underlying the common conception of a hospital is that of a place for medical or surgical treatment. On the other hand, a home for the aged is a place where persons of advanced years go to live. Such places are the usual resort of aged persons, who for one reason or another have no homes of their own, or who have no relatives or friends able or willing to provide them with homes. The conditions of admission are usually the attainment of a certain age and the payment of a certain fee, in consideration of which the institution undertakes to provide board, lodging, attendance, clothing and, of course, medical attendance when needed, and all the other material incidents of a home. Persons do not resort to such institutions for medical or surgical treatment, but to be provided with the necessities and a part or all of the comforts of home. The inmates may or may not be in need of medical or surgical treatment. Need of such treatment is in no sense a condition of admission, nor is it the main purpose of such an institution to provide such treatment. That is merely an incident of providing a home. The court assumes that the institution in question is a charitable institution. It may be unfortunate to have a garage erected in close proximity to an institution of this nature. But the word "hospital," as used in the ordinance, must be taken in its common acceptation; and to prevent the realtor from completing its garage, without reimbursement, by giving the word "hospital" a construction which perhaps it can be made to bear, but which is not the sense in which it is generally understood, would be a grave injustice. Wherefore, the court is constrained to hold that the institution here in question is not a hospital within the meaning of the ordinance, and therefore that the relator's permit for the erection of a garage was wrongfully revoked.

Employer's Liability to Physician Independent of Workmen's Compensation Act

(Ferren v. S. D. Warren Co. (Me.), 125 Atl. R. 392)

The Supreme Judicial Court of Maine, in overruling the defendant's exceptions and motion for a directed verdict in this action brought by a physician, wherein the jury found in his favor, says that an employee of the defendant was injured through an industrial accident arising out of said employment. Under Section 10 of the workmen's compensation law of Maine, the defendant, without contract except as implied from its status as an assenting employer, was bound to furnish, or pay for, medical aid to an extent determinable by the industrial accident commission. This implied obligation of the employer is enforceable exclusively through petition to and decree of the commission. But the employer may bind himself by express contract to pay medical bills. Such contract is enforceable through the common-law courts. No commission decree is necessary to give binding force to such a contract. Unless the contract expressly so provides, such decree cannot limit the extent of the obligation. In this case the jury found that the defendant employed the plaintiff to attend its disabled employee, and expressly and unqualifiedly undertook to pay for such services. No question was raised as to the rendition of the services or the charge therefor. Evidence was adduced tending to support the jury's findings. The evidence was not manifestly erroneous. Nor was there any merit in the exceptions. The defendant through its exceptions relied on the doctrine of election of remedies. But the only remedy that the plaintiff had elected was the present suit. The petition to the commission was filed by the injured employee. That remedy was not open to the plaintiff. He did not attempt to invoke it. The decree of the commission was properly excluded. That decree was the result of a proceeding between the employee and the employer. The plaintiff in this case was not a party to it. As between the employee and the defendant, it determined the extent of liability for medical aid. It did not affect any obligation that arose from the express contract between the plaintiff and the defendant. Again, the defendant's counsel in his motion for a directed verdict set up the statute of frauds, which requires undertakings to answer for the debts of others to be in writing. But the claim of the plaintiff was that the defendant's promise to pay for the plaintiff's services was an original and not a collateral promise. The statute of frauds applies only to collateral promises.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Cleveland, April 9-11. Dr. Lewis H. Weed, Johns Hopkins Medical School Baltimore, Secretary.

Central Section of the American Roentgen Ray Society, Detroit, Feb. 19-21. Dr. B. R. Kirklin, Western Reserve Life Bldg., Muncie, Ind., President.

Middle Section of American Laryngological, Rhinological and Otological Society, Lafayette, Ind., Feb. 23. Dr. George F. Keiper, 14 North 6th Street, Lafayette, Ind., Chairman.

NEW YORK ACADEMY OF MEDICINE

Section of Neurology and Psychiatry

Meeting held Jan. 13, 1925

DR. CHARLES A. MCKENDREE, Presiding

Some Causes of Crime and the Mental Status of the Criminal

DR. AMOS O. SQUIRE, Ossining, N. Y.: A crime is an act forbidden and punished by the law, which is almost always immoral according to the prevailing ethical standard; which is harmful to society usually; which it is generally feasible to repress by penal measures, and whose repression is necessary, or is supposed to be necessary, to the preservation of the existing social order. If we accept this definition of crime, I think we will all agree that, since the enactment of the eighteenth amendment, we have probably more criminals today than ever before in the history of the United States. I think we will further agree that only a small percentage of the criminals are in jail or in prison, or will ever be the wards of the state. I am satisfied that only a small percentage of the professional criminals are ever in prison at any one time.

It has been estimated that crime costs the United States a total of from 8 to 12 billion dollars annually. At Sing Sing, during the fiscal year ending June 30, 1924, we received 1,086 men, of whom 909 were white, 173 were negroes, and four were mongolian. As to education, twenty-seven stated that they had spent one or more years in college; 111 had attended high school; 432 had been above the sixth grade, grammar; 476 had been below the sixth grade, grammar, and forty had had no schooling. Twenty-one foreign countries were represented in those admitted. We found 435 moderate

drinkers; 651 abstainers; 965 used tobacco; 121 used no tobacco; 328 were idle when arrested, and 758 were employed when arrested. Ten per cent. were under 21 years of age, and 66 per cent. were under 30 years of age.

It is estimated that in 1922 there were 500,000 persons who passed through the corrective and penal institutions of the United States. In 1924, in New York State there were more than 110,000. Criminal conduct frequently results from the unusual strength of certain criminal instinctive traits, or from the unusual weakness of certain restraining factors in human nature. At Sing Sing Prison we received about 70 per cent. of all the convicted felons sent to prison in New York State. I have studied more than 12,000 of them, and the physical and mental (including the psychologic) examination is very complete. As a result of these studies I cannot agree with Lombroso that there is to be found a certain malformation of the skeleton and of the viscera, and several abnormalities in the physiologic processes usually present among criminals. I have examined more than 200 men condemned to die in the electric chair for murder, and have electrocuted and performed complete postmortem examinations in 124 cases, and I have failed to find in them any anatomic differences from the rest of humanity.

Some observers state that a person who is left handed is more likely to commit crime than a right handed individual. Looking over my last 1,000 cases I find 92 per cent. right handed; 5 per cent. left handed, and 2 per cent. ambidextrous. These are about the figures found in persons of the same age outside the prison. Instead of being more likely for left handed persons to commit crime, I think it is a greater crime to worry mothers who have left handed children into thinking that their children will be criminals when they grow up. I believe that we have in our population a certain number of inmates who are born with traits that make them peculiarly prone to crime if their environment is conducive to criminal conduct; but to say that 90 or 100 per cent. of the criminals are suffering with defective affectivity and incurable is pure rot.

INFLUENCE OF DRUG ADDICTION

Although none of the last thousand inmates gave a history of delinquency on the part of their parents, we found sixteen who had brothers who had served a term in some correctional or penal institution. I say, notwithstanding, that 51 per cent. are recidivists or repeaters when they arrive at Sing Sing Prison; 27 per cent., from reformatories, etc. Ninety-one per cent. of the men paroled from Sing Sing Prison made good on their parole and, as far as we know, are not in other penal institutions. This, to my mind, is a fine showing, when it is considered that about 7 per cent. of the inmates admitted to Sing Sing Prison are drug addicts and probably 50 per cent. of them go back to their habit on their release. In fact, we have more parole violators who are drug addicts than for any other single cause.

I believe that physical conditions concerned with the causation of delinquent tendencies could be divided into those which cause weakness and those which cause irritation.

At present, one of the great causes of men coming to prison is the drug habit, and heroin is the drug used in 96 per cent. of the cases. During the last few years, the number of those admitted to prison who are suffering from this addiction has been increasing tremendously.

Prior to 1919, we received an average of thirteen drug addicts a year. In 1917 only four were admitted to prison. In 1920 the number increased more than 100 per cent. over the average for the years prior to 1919. In 1921 it increased 580 per cent., and in 1922 it increased 900 per cent. In 1923, the number of addicts was 7 per cent. So, today, one out of every fourteen admitted to Sing Sing Prison was suffering from the drug habit, or about 7 per cent. Ninety-nine per cent. buy it from the drug pedlers, and less than 1 per cent. from the physician or druggist. Notwithstanding the fact that addicts may spend many years in prison without an opportunity to use drugs, more than 50 per cent. of them take to the habit immediately on leaving. This shows the tremendous depreciation in their physical and mental make-up caused by its use.

MENTAL RETARDATION

A feebleminded person may become a criminal because of his intellectual disability. During my studies of the mental condition of inmates I have been trying to differentiate between those mentally deficient and those mentally retarded. This is quite important, for in the case of the mentally retarded we might consider such a person an institutional patient, and if a thorough physical examination were made and the disabilities corrected, the mental condition of the inmate would improve, this shows that we must not be satisfied with just making a psychometric measurement alone, no matter how skilled we may be in these tests. The only hope of improvement we have is in the mentally retarded group, and it is my experience that almost 50 per cent. of the so-called mental defectives come under this classification. There are a great many causes of mental retardation, including diseases of the tonsils and adenoids, valvular heart lesions, ozena, defective hearing, anemia and a bad condition of elimination.

INFLUENCE OF INSANITY

The influence of insanity on crime has always been recognized and it has always been our experience at Sing Sing Prison that the greatest number of those who become mentally disturbed generally do so at or near the end of their term in prison, which may be due to the fact that the prisoner is worried over his ability to adjust himself to the situation that he has to face on his release and the reaction of society toward him.

Some forms of insanity influence criminals to commit various characteristic crimes. Dementia praecox unfits a man for a useful career. He is incapable of holding a position, and is weak in the face of temptation and consequently is likely to be led into a career of crime. He frequently acquires bad sex habits and may drink incessantly. Senile dementia sometimes leads aged persons, especially old men, to petty offenses such as stealing, but more especially to sexual offenses such as exhibitionism and sometimes even rape. Dementia praecox at all times of life may and sometimes does lead to crime, but it has its effect most frequently in the young. Healy says that not more than twenty-five and probably less than that number in 1,000 young repeated offenders showed symptoms of dementia praecox.

I am one of those who believe that men are frequently sent to prison who might better be put on strict probation in the interests of society and the public welfare.

CAPITAL PUNISHMENT

When one realizes that in the United States, in 1922, with a population of about 110,000,000 people, there were approximately 9,500 homicides and but 114 executions, whereas in Great Britain and Wales, with approximately 40,000,000 people, there were but sixty-three murders, we cannot help feel that capital punishment has not been the deterrent factor that its advocates hoped it would be. This may be due to the fact that men who are sent to Sing Sing for electrocution are frequently with us for from one to one and one-half years before the death penalty is finally inflicted. The deterrent influence has been considerably lessened, it seems, by the long lapse of time between the commission of the crime and the carrying out of the penalty. I feel that it is an injustice both to society and to the prisoner sentenced to death to have such a long delay. One reason why we have so many more murders here than in England is that in England they have swiftness and sureness of justice, while here it is slow, often evaded, and often mild in proportion to the offense committed. The machinery is too slow, too slack and too weak.

DISCUSSION

DR. P. R. LEHRMAN: My experience with crime and criminals is limited to the study of the unconscious impulses in the psychoneuroses, which impulses when consciously satisfied are the crimes that society so dreads. From the early dawn of civilization, the restrictions that society has devised to curb these impulses, the restrictions by religion, ethics and law, seem never to have eradicated antisocial behavior. We find, however, that the restrictions which the

individual has set up for himself, to curb his own impulses, and I am referring to the inhibitions of the psychoneurotic patient, are unusually protective and are the most deterring factors against the commitment of any criminal act. Indeed, very few psychoneurotics are criminals. The neurosis seems to protect them from committing criminal acts. Therefore, from society's standpoint, the neurotic is the ideal citizen. The neurotic's fears protect him even from crimes which the law has not yet designated as crimes. I am referring to the homicides by the automobile. My neurotic patients are extremely cautious drivers, and they are rarely guilty of accidents. Their unconscious sense of guilt often paralyzes them long before they can commit a guilty act. These neurotic overdefense mechanisms are, however, not desirable. The research worker in criminology, the psychiatrist, must make it his task to discover the routes by which this "ideal citizen"—the neurotic—has come to be, and in part apply those mechanisms in preventing the making of criminals. But he must act like the surgeon who does not allow the infection to terminate in suppuration. He must here interfere with Nature's solution to its problem and substitute scientific control in the building of character. Thus crime may be controlled by emulating psychoneurotic methods, but omitting its disabling features for the individual.

DR. ADOLPH STERN: An exceedingly prevalent if not universal phenomenon in the delinquent, both youthful and adult, is the absence or serious diminution of the sense of guilt. He has no conscience. In this respect he differs from the neurotic. The latter is unduly burdened with a sense of guilt, which interferes with the display of mental activity, in the form of overt acts, even as regards trivial things, which no one but a neurotic regards as wrong. The neurotic, in his phantasies, indulges in every form of crime; his sense of guilt prevents him from carrying out any of his phantasied activities. Guilt, a conscience, also is the factor preventing the normal from committing crime. The delinquent also lacks in that, from a psychanalytic point of view, he forms no transferences. He does not respect and love. He holds few, if any, people in high regard, except his ideal in the form of some notorious criminal. He, the delinquent, seeks to identify himself with such a person, but bears him no love or tender regard, such as a normal child, of the same age as the youthful delinquent, will bear to his parent or hero. From such a love (transference) springs conscience and a sense of guilt. How that comes about is not germane to the question in hand.

Any process, then, which can aid in the formation of a conscience or sense of guilt will be of service in the education of the delinquent along such lines as will aid in the prevention of crime. Dr. Squire mentioned religion, among others, as means, when early inculcated, to prevent delinquency, also the teaching of ethical living. In fact, any means of developing love, veneration and respect are potent factors in developing a conscience; while too much of this may tend to develop a neurotic, yet the risk may well be taken, in view of the danger to which society is exposed through the acts of the delinquent.

DR. SYLVESTER R. LEAHY: I would advocate prevention at very early ages when children are first placed in school. The school should be regarded as a social center and a place where the first great adjustment is made. The proper grading of children, especially those of the defective and superior types, will prevent the establishment of petty delinquencies which often graduate into serious crimes in later life.

DR. CLARENCE P. OBERNDORF: The relativity of crime has not been greatly emphasized, though certain acts considered criminal in one time and generation and place and even period of life are not so regarded in another. Recently it has become a crime to sell alcohol in the United States, and inferentially it is a crime to drink it for other than medicinal purposes. Under such stipulations we must all admit the existence of a great deal of sickness or inferential crime among many of our respected citizens and occasionally, it is whispered, among our lawmakers themselves. Similarly, it is no longer regarded as a crime to deviate from the accepted religious faith of the country, although not many centuries ago Quakers were flogged for the crime of heresy in New England. Crime is apparently inability to conform with coincidental cultural demands of society or rather, to be detected in not conforming. There is not the slightest doubt that nearly all of us harbor slightly below the threshold of consciousness most of the desires which, if carried into execution, would characterize us as criminals. I have had no experience with persons convicted of crime, but from the analysis of psychoneurotics have observed how prevalent criminal desires are in them and how easily the expression of such urges can be brought to the surface when restraint is removed. Even the desire to kill cannot lie very deeply buried below the conscious in the average man, otherwise the multitude of soldiers taken from our midst could not fall so quickly, some even eagerly, to killing the fellow in the army of the nation's enemy with the declaration of war, which for the time being makes killing a virtue rather than a crime. The analysis of neurotics has also revealed that the impulses which would be crimes unless suppressed constitute an overreaction to the repressing demands of society. The neurotic safeguards himself against these desires by some compromise formation which constitutes the symptoms of his sickness. I might add that most of these compromises are unconsciously built up to prevent him from attacking parental authority. I have wondered whether Dr. Squire has been able to determine how far some of the outrages against society represent the same type of reaction represented in the neurotic's conflict with home authority. How far is the crime an overreaction against law (authority) for inadequately repressed resentment originally directed elsewhere. The increase in heroin addiction among the admissions to Sing Sing after 1919 is very striking indeed. Can its incidence be traced to the enactment of the prohibition amendment about that time?

DR. AMOS O. SQUIRE, Ossining, N. Y.: Mention has been made by one of the speakers that acts that are criminal in some states are permissible in other states. I recall that, while in Utah last fall, I found it was a crime to buy cigarets in that state; but a few moments' observation showed me that one could buy all the cigarets one wanted, at an increased price over that charged in other states. In other words, I found that a large portion of the population did not hesitate to become lawbreakers in that respect. It has been estimated that we have in this country some 2,000,000 laws and ordinances, and that they grow at the rate of 100,000 every year. In fact, in 1924 there were 60,000 laws proposed in the legislative bodies of thirty-eight states. It is quite impossible nowadays to turn around without becoming a lawbreaker. I have been asked by one of the members of the academy whether I thought that drug addictions increase was due to prohibition. I have no facts on which to base an answer to this question that are not open to or in possession of the members of this body. But as to the effect of prohibition on drug addiction's increase, it must not be lost to sight that up to the present, according to the figures given out by the government and other sources, there still seems to be a lot of alcohol consumed. I find, also, a great many addicts who claim they are abstainers from alcohol. It is true that in determining whether a person is right or left handed the subjects examined often have difficulty in deciding. They will frequently have to meditate about it; but there is no doubt in my mind that the percentage of left handed persons in prison is no greater than that found on the outside.

Medicine and Community.—Medicine more than ever before is a career of public responsibility in all its branches. The power for good of the knowledge available for us is balanced by the dangers of our ignorance; the confidence of our fellows, which enables us to console, endows us with extraordinary power to deceive. The work we do infiltrates with its influence the destinies of individuals, families, communities and nations. These and many other things limit our freedom of action as private individuals.—Zinsser, Hans: *Boston M. & S. J.* **191**:1058 (Dec. 4) 1924.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

633: 681-936 (Dec.) 1924

*Prognosis in Organic Heart Disease. G. W. Norris.—p. 781.
*Prognosis of Angina Pectoris. L. Hamman, Baltimore.—p. 786.
*Prognosis of Tachycardias. J. S. McLester, Birmingham, Ala.—p. 795.
*Tumors of Breast. J. F. Erdmann, New York.—p. 799.
Results of Operations for Chronic Appendicitis. (Second Series.) C. L. Gibson, New York.—p. 807.
Pressure Factors in Biliary-Duct System of Dog. A. Winkelstein and P. W. Aschner, New York.—p. 812.
*Bone Marrow and Spleen in Treatment of Anemia. C. D. Leake and J. S. Evans, Madison, Wis.—p. 819.
*Splenic Anemia: In Late Stage Cured by Splenectomy. W. Horgan, W. P. Reeves and W. E. Clark, Washington, D. C.—p. 836.
*Combined Sclerosis of Spinal Cord and Carcinoma of Stomach. J. L. Garvey and L. D. Stern, Ann Arbor, Mich.—p. 841.
*Treatment of Tetanus; Use of Magnesium Sulphate. C. Smith and W. E. Leighton, St. Louis.—p. 852.
Fat Digestion. A. Bassler and J. R. Lutz, New York.—p. 869.
Primary Cancer of Liver. J. Friedenwald and H. Fried.—p. 875.
Pathways of Mediastinum, Lungs and Pleurae. J. C. Lyter, St. Louis.—p. 882.
*New Vascular Sign of Death. M. H. Kahn, New York.—p. 890.
*Auricular Flutter, with Periods of 1:1 Ventricular Response. T. M. McMillan and J. A. Sweeney, Philadelphia.—p. 893.

Prognosis in Heart Disease.—Recurrent attacks of decompensation, especially if unprovoked, Norris says, are of bad augury, and opinion should be withheld if the patient is seen for the first time while decompensation obtains. The age of the patient also has a bearing. If the disease develops in early adult life, the outlook is more promising than if it appears earlier or later, because the strain of growth is over, the likelihood of renewed infection is lessened, disease of other organs has not yet begun and degenerative arterial changes are still in the future. Factors which bring about cardiac decompensation are the same factors which cause death. They are four in number, their relative importance being in the order named: (1) infection; (2) arteriosclerosis; (3) change of rhythm; (4) toxemia. Social surroundings play an important rôle. A change of occupation may greatly change predictions. Prognosis will depend largely on etiology.

Prognosis of Angina Pectoris.—Hamman asserts that although angina is a serious disease, often accompanied by sudden death, still it is compatible with many years of useful life and often is characterized by long periods of remission which sometimes resemble cure. There is no sure way to distinguish the malign rapidly fatal cases from the benign ones which last for a decade and longer. However, a careful consideration of the nature of the underlying process and a study of the functional range of the heart will give valuable data on which to risk a forecast. At present prognosis is in the stage of group prediction.

Prognosis of Tachycardias.—In the various tachycardias McLester based the prognosis on two factors: First, an understanding of the pathologic process which causes the abnormal rate; the second, on accurate clinical observation concerning the ease or difficulty with which the patient meets the handicap imposed by the disease.

Tumors of Breast.—In Erdmann's opinion no tumor in the breast is a desirable tenant, even if its innocence be proven without a question of doubt. A growth in the remaining breast is as likely to be of primary origin as was that in the breast first removed. At present it cannot be stated positively what the influence of roentgen ray and radium is either as preoperative or postoperative aid. But in view of many apparent reductions in size, previous to operation in cases considered nonoperable, the use of roentgen ray and radium should be encouraged until proved a menace. Postoperative treatment should not be neglected for preoperative treatment until some definite proof of its help or inefficiency has been established. In the presence of late metastases, the powerful currents of the present day should be given a thorough test to prove or disprove the efficacy of this method of treatment. The most thorough and painstaking wide removal with remote glandular and fascial dissections will tend more and more to increase the percentage of cures and extension of life. The radical operation is attended with so low a mortality as to promote a greater desire on the part of the consulting physician to demand early operation.

Bone Marrow and Spleen Treatment of Anemia.—An investigation made by Leake and Evans demonstrated that desiccated bone marrow and spleen were more efficient in promoting hematopoiesis in combination than separately. Desiccated spleen and red bone marrow combined in equal proportions by weight and administered in 0.3 gm. (5 grain) capsules, has been found beneficial in the symptomatic treatment of secondary anemia, and presents many advantages over iron and arsenic. In this report, sixty-five cases of various types of anemia are presented, in which the action of desiccated spleen and marrow has been carefully followed. Of these sixty-five cases, forty-seven were moderately to markedly improved with respect to the blood picture and other objective criteria, while eighteen showed slight or no improvement. Among these latter are two cases of progressive pernicious anemia. The results thus far seem sufficiently encouraging to warrant further careful and critical trial of this method of promoting hematopoiesis.

Splenectomy in Splenic Anemia.—Horgan and his associates feel that the recovery of their patients helps to strengthen the view that whatever the cause of splenic anemia may be, it is primarily in the spleen.

Sclerosis with Carcinoma of Stomach.—A case of combined sclerosis of the spinal cord and carcinoma of the stomach, with necropsy findings, is reported. The close resemblance clinically and pathologically between this combination of diseases and that including pernicious anemia is pointed out. The importance prognostically and therapeutically of determining the etiology of an accompanying anemia in cases of combined degeneration of the spinal cord is emphasized.

Magnesium Sulphate in Tetanus.—Smith and Leighton report eight consecutive cases of acute tetanus, all of which recovered under treatment with magnesium sulphate and antitetanic serum. The rational treatment of tetanus advised by them should be carried out as follows: Prophylactic antitoxin, subcutaneously in all suspicious wounds, repeated again after ten days, especially if suppuration is present, or if an operation is to be performed. Antitetanic serum should be given during an attack of tetanus. Intravenous administration may be satisfactory. Intraspinal serum therapy should be employed in severe cases or when improvement is not satisfactory. Spasms should be controlled by the subcutaneous injection of magnesium sulphate. In urgent symptoms or when the subcutaneous method fails, the intraspinal or even the intravenous route should be employed. Morphin sulphate, in addition to magnesium sulphate, may aid at times. Careful personal observation is necessary in order to judge the dosage and method of administration of magnesium sulphate. The wound should be opened and cleaned, and air should be allowed to reach it. Tincture of iodin should be used locally. Serum should be injected at the site of the wound to block the progress of the toxin. An intramuscular or subcutaneous injection of serum should be given on the eighth or ninth day after the beginning of the treatment, in order to keep up the prophylaxis. Fluids and nourishment should be supplied, and careful nursing is essential.

New Vascular Sign of Death.—The phenomenon pointed out by Kahn as a significant sign of death consists in segmentation of the venules and arterioles. Transverse interruptions in the red color of the vessels, giving the appearance of division or striation of the blood column are noted. These interruptions, often only few in number, are apparently chiefly in the veins and occur both near the disk and distant from it. They occur less constantly in the smaller arteries.

While looking at the fundus of the eye, or during the course of frequent repeated examinations of it, or at any accessibly superficial venules, one notices from time to time, a distinct variation in the length of one or the other striation. This can be made more evident by turning the head of the subject from side to side or by compressing the vessel momentarily. It can be still more accentuated by pressure on the eyeball, in both these ways modifying the retinal intravascular pressure. Firm external pressure on the eye empties the veins in the region of the disk and also the central artery. On relaxation the vessels refill to their former capacity. These manipulations for a time after death alter the size of the interruptions considerably. After about three hours, the vascular striations are no longer influenced by manipulation and pressure. These phenomena are sometimes more manifest in one eye than in the other. These observations have been confirmed by animal experiments.

Auricular Flutter with Periods of 1:1 Conduction.—A case of auricular flutter is reported by McMillan and Sweeney in which the ordinarily present 2:1 block was interrupted by periods of 1:1 conduction, which lasted two or three minutes. These paroxysms were very easily induced by relatively slight exertion. When present these paroxysms place a serious and alarming strain on the heart. A second case of auricular flutter is reported in which exertion brought on 1:1 conduction in alternate cycles. It is suggested that periods of 1:1 conduction in auricular flutter are more common occurrences than the scarcity of reported cases would indicate.

American Journal of Roentgenology and Radium Therapy, New York

12: 509-601 (Dec.) 1924

Wave Form and Efficiency: Analysis of Roentgen-Ray Therapy Machines. W. E. Chamberlain and R. R. Newell, San Francisco.—p. 509.
Erythema as Unit in Deep Roentgen-Ray Therapy Dosimetry. E. T. Leddy and J. L. Weatherwax, Philadelphia.—p. 514.
Objections to Use of Radium Emanation in Bare Tubes. W. L. Clark, J. D. Morgan and E. J. Asnis, Philadelphia.—p. 519.
Radium in Lesions of Female Urethra. L. A. Pomeroy and F. W. Milward, Cleveland.—p. 524.
Conservation of Normal Tissue After Treatment with Radium. D. W. Montgomery and G. D. Culver, San Francisco.—p. 526.
Radium Treatment of Diseased Tonsils. C. A. Simpson, Washington, D. C.—p. 527.
End Results of Treatment of Carcinoma of Breast with Surgery, Radium and Roentgen Rays. H. Schmitz, Chicago.—p. 531.
Dilatation of Diploic Veins and Other Anatomic Variations in Skull. L. T. Lewald, New York City.—p. 536.
Multiple Myelomata: Case. W. J. Stone, Pasadena, Calif.—p. 543.
Clinical Diagnosis of Common Sacro-iliac Conditions. M. N. Smith-Petersen, Boston.—p. 546.
Uretero-Pyelography in Differential Diagnosis of Upper Urinary Tract. J. D. Lawson, Woodland, Calif.—p. 551.
Versatility of Roentgen Rays. G. L. Clark, Cambridge, Mass.—p. 556.

Archives of Otolaryngology, Chicago

1: 1-130 (Jan.) 1925

*Relation of Endocrine Glands to Disorders of Ear, Nose and Throat. A. J. Carlson, Chicago.—p. 1.
*Technic of Operations for Abscess of Brain. C. A. Elsberg, New York City.—p. 14.
*Treatment of Brain Abscess. J. E. J. King, New York City.—p. 26.
Present Status of Intranasal Ethmoid Operation. J. A. Pratt, Minneapolis.—p. 42.
*Results of Treatment of Carcinoma of Esophagus by Combined Use of Radium Emanations and Deep Roentgen Ray. D. C. Greene, Boston.—p. 51.
*Chlorin Gas as Treatment for Respiratory Diseases. M. F. Jones and C. Garofalo, New York City.—p. 58.
*Bacteriologic Study of Nasopharynx in Patients Treated with Chlorin Inhalations. M. B. Patterson, New York.—p. 64.
Treatment of Papilloma of Larynx by Fulguration and Diathermy. T. Hubbard and E. G. Galbraith, Toledo, Ohio.—p. 70.
Aspects of Problem of Testing of Audition: New Portable Apparatus. F. W. Kranz, Geneva, Ill.—p. 79.
Functional Examination of Hearing. R. Sonnenschein, Chicago.—p. 89.

Relation of Endocrine Glands to Ear, Nose and Throat Disorders.—Carlson asserts that so far as can be seen at present, the thyroid is the only endocrine gland and the only field of organotherapy that calls for a serious survey and investigation from the point of view of possible relations to the infectious diseases of the ear, nose and throat, even in cases in which distinct cretinism or myxedema is absent.

Treatment of Brain Abscess.—Elsberg operates under local anesthesia, except when the patient is a child or is restless or delirious; uses a needle with a rounded end, and protects the meninges against infection by means of small strips of gauze soaked in tincture of iodin and packed between the dura and the brain on all sides, so as to wall off the area of operation from the surrounding meninges. The steps of the procedure, from the puncture with the exploring needle to the introduction of the drainage tube, are illustrated. A large, rigid drainage tube of soft rubber, which is split at the emerging end, is fixed to the scalp on both sides by several silk sutures. The drainage tube should never be removed but should remain in place for a number of weeks, until all drainage of pus has ceased. In an abscess without a limiting wall, as soon as the pus has been found with the exploring needle, and while the needle is still in place, the opening in the bony skull is enlarged with rongeur forceps until a large opening in the skull, measuring about 5 by 6 cm., has been made. The dura is opened widely, and iodin gauze packings are inserted all around. An incision from 3 to 5 cm. in length is then made in the cortex, and is carefully deepened until the abscess cavity has been exposed and opened. Instead of using a tube for drainage, a piece of rubber dam with gauze strips packed into it is inserted into the abscess cavity, thus forming a Mikulicz tampon, which keeps the abscess cavity wide open.

Treatment of Brain Abscess.—The operative technic and postoperative treatment described by King consist in the creation of a rather large cranial defect directly over the abscess cavity; complete "unroofing" of the cavity; complete herniation or eversion of the cavity; irrigation of the area with surgical solution of chlorinated soda by means of the apparatus devised for this purpose; prevention of trauma and early compression of hernia cerebri; lumbar puncture, if necessary, after the first two weeks; recession of the hernia; adhesive plaster strapping; epithelization. Four patients consecutively operated on in this manner have recovered; three of them with true brain abscess and one with traumatic brain abscess surrounding a retained foreign body. There was no mortality.

Radiotherapy of Carcinoma of Esophagus.—Thus far, the cases treated by Greene by the combined method have shown a slight improvement in results when compared with those treated by radium alone. So far as Greene has been able to discover, there have been no authenticated cases of cure of cancer of the esophagus by irradiation in this country.

Chlorin Gas Treatment of Respiratory Diseases.—Jones and Garofalo have treated about 300 patients with chlorin gas. The technic of treatment was the same as that reported by Vedder and Sawyer. Treatments were given only once in some instances, and in others were repeated at intervals of twenty-four hours for several days. The concentration of gas was also varied somewhat. In general, the concentration was increased almost to the limit of tolerance, which proved to be a concentration of 0.015 mg. per liter, as a general rule, but on very favorable days somewhat higher. In hay-fever and in all allergy cases, the treatment caused an increase of symptoms with distinct discomfort to the patient, and these patients were unable to stand even the concentration tolerated by the average patient. Tuberculosis is made worse, so far as subjective symptoms are concerned. In suspected tuberculosis there is an attack of coughing induced which easily might disseminate the causative organism, making an active lesion from a quiescent focus. Five patients with whooping cough have been treated. One was definitely unimproved, and four did not return for treatment, having had quite bad paroxysms during the administration of the gas. On follow-up, these patients reported an improved condition; but they could not be induced to return for a second treatment. The authors conclude that chlorinated air has no alleviating effect on patients with free pus in the nose or rhinopharynx. As a sterilization of the field of operation for nose and throat conditions, chlorin is not sufficiently germicidal in the dilution tolerated to be of benefit. As a prophylaxis for acute respiratory epidemics, their experience has been insufficient to permit conclusions.

Effect of Chlorin Gas on Nasal Flora.—Patterson's bacteriologic study made on several hundred patients shows that

sterilization of the respiratory mucous membrane by inhalation of chlorin in a concentration of from 0.015 to 0.020 mg. per liter of air for an hour or two is not to be expected. The concentrations of chlorin used do exert an effect, however, and often this may be in the direction of microbe reduction, of possible assistance to the body defenses in combating superficial infection. Although chlorin inhalation is not without possibility of injury, its extensive application to acute superficial respiratory inflammations, under suitable scientific control, appears justified in the light of the laboratory studies. The ultimate decision as to its value must be based on extensive clinical trial.

Archives of Surgery, Chicago

10: 1-260 (Jan.) 1925. Part I

*Endometrial Carcinoma of Ovary. J. A. Sampson, Albany, N. Y.—p. 1.
*Postoperative Massive Collapse of Lung. W. J. M. Scott, Boston.—p. 73.
*Effect of Ligation of Branches of Renal Artery. A. E. Belt, Los Angeles, and J. J. Joelson, Cleveland.—p. 117.
*Ectopic Adenomyoma: Postoperative Invasions of Abdominal Wall. W. S. Lemon and A. E. Mahle, Rochester, Minn.—p. 149.
Fracture Clinic. I. Cohn, New Orleans.—p. 163.
*Myositis Ossificans. J. R. Paul, Philadelphia.—p. 185.
*Survival of Bone After Removal from Body. S. L. Haas, San Francisco.—p. 196.
*Drainage of Subcortical Brain Abscess. C. C. Coleman, Richmond, Va.—p. 212.
Twenty-Fifth Report of Progress in Orthopedic Surgery. R. B. Osgood et al.—p. 217.

Endometrial Carcinoma of Ovary.—In seven of sixteen specimens of ovarian carcinoma studied by Sampson (without any evidence of cancer of the body of the uterus), benign endometrium-like tissue in the ovary was found, bearing the same histologic relation to the malignant growth that the benign uterine mucosa bears to the adenocarcinoma arising in the body of the uterus. The carcinoma had either arisen in this tissue or was invading it from another source. In all seven instances, the histologic structure of the carcinoma was similar to that found in some cancers of the body of the uterus. In four of these seven cases, the carcinoma could be interpreted as having developed in the epithelial lining of a benign cyst of endometrial origin, which had become fused with other pelvic structures at the site of a previous perforation of the cyst, and was associated with a benign endometrial invasion of the posterior uterine wall. In two of these four cases, other interpretations could be made. In the other three of the seven cases, the carcinoma may have arisen in endometrial tissue in the ovary, which had not developed into an endometrial cyst. In the nine remaining carcinomas, endometrial tissue was not found, although it could have been present in some of these. The malignant growth may have replaced all the benign endometrial tissue present in the ovary, which may have been small in amount, and the associated malignant implants may have covered any benign peritoneal implants present. Sampson does not believe that all carcinomas of the ovary are of endometrial origin. Some are, however, and possibly the percentage is large, a fact that is in accord both with the frequency of endometrial tissue in that organ and with the endometrial type of many ovarian carcinomas.

Postoperative Massive Collapse of Lung.—Four cases are added by Scott to thirty-six already on record. Postoperative massive atelectasis presents a striking clinical syndrome, and is relatively frequent. It is differentiated from all other acute conditions by displacement of the heart and mediastinum toward the side that shows evidence of pulmonary consolidation. Asymmetry of the chest, unilateral limitation of respiration, and cyanosis are early and striking signs. Latent cases occur which are nearly symptomless, and others are so severe that they resemble pulmonary embolism. The prognosis is excellent. Massive atelectasis may be complicated by bronchopneumonia, and in this group the fatalities occur. The mechanism of massive atelectasis appears to be a reflex blocking of the finer air passages in the affected lung tissue, quite possibly of vasomotor origin. Collapse of lung tissue after operation seems to be a significant element in other pulmonary complications. Infarction in an atelectatic area is suggested as the usual mechanism of postoperative bronchopneumonia.

Ligation of Branches of Renal Artery.—By means of the celluloid injection method, studies were made by Belt and Joelson of the arterial circulation of human and dog kidneys. As pointed out by other observers, the presence of a definite endarterial circulation in the parenchyma was readily demonstrated. Anastomoses, however, were observed between the fine arteries supplying the pelvis and ureter and between the glomerulus-bearing vessels, which had perforated the capsule and supplied areas of perirenal fat. The changes produced in the circulation of the kidney following ligation of one of the larger renal arterial branches were clearly portrayed. An almost absolute ischemia confined to the region supplied by the blocked vessel is followed by a late ingrowth of small anastomotic channels into the bloodless area. These increase in size up to the fifth week, after which scar tissue formation, resulting from the effect on the stroma of the long period of ischemia, again makes the area relatively avascular. The end-result is a depressed stellate scar equal in area to the region supplied by the ligated branch. Although, in renal surgery, it may at times be necessary and justifiable to divide one of the larger branches, it should be borne in mind that such a procedure causes a necrosis of the area of renal parenchyma supplied by that vessel. While this necrosis may not be of a magnitude that will result in clinical evidence of renal insufficiency, still, it does definitely decrease the amount of renal reserve tissue, for restoration of function in such areas is shown to be anatomically impossible.

Ectopic Adenomyoma.—Lemon and Mahle do not believe that the accepted hypotheses with regard to the production of the adenomyomas of the uterus and tubes explain the presence of adenomyoma in the abdominal wall. Cullen's hypothesis is satisfactory, provided uterine mucosa can be transplanted and will grow in the tissue of the abdominal wall. Chiara's and von Franque's explanation of the growth of a transplant is plausible; and it is shown that inflammation was present in this series of cases. Judd's idea that the uterine mucosa may be transplanted by needle and suture into the abdominal wall is logical. Various methods of operation were performed for uterine prolapse, and in each instance it was possible for uterine mucosa to be carried to the abdominal wall.

Myositis Ossificans.—Paul's case was one of a circumscribed tumor showing an outer bone shell arising from the head of the fibula and allowing the peroneal nerve to traverse it in a deep groove. Subjected to a microscopic pathologic study, it presents many of the features of a sclerosing osteogenic sarcoma or ossifying fibroma of questionable malignancy, logically interpreted as tumor tissue regardless of its exact subclassification. Recurrence was first noticed fourteen months after operation, with subsequent rapid growth necessitating amputation of the leg. This time the roentgenologic and the pathologic picture were quite different, and the lesion apparently appeared as a progressive myositis ossificans. An attempt is made to explain this rather unusual series of events.

Survival of Bone.—Experimental study by Haas shows that bone after removal from the body does not die immediately, but retains its vitality for variable periods, depending on the environment. The degenerative processes can be retarded, but not completely suppressed, by exposing the bone to a freezing temperature. In order to insure the preservation of the maximum life properties of bone after removal from the body, it is advisable to keep it at a freezing temperature. It is also essential that such bone be used at an early time, as the vitality of the osteogenic cells becomes less as time increases and is absent after five days.

Drainage of Brain Abscess.—Simple exploration with drainage through a small trephine opening was used by Coleman in seven cases of brain abscess, and a bone flap was made in two cases because of an uncertain preoperative diagnosis. In these two cases, the flap operation was of no especial advantage because the abscess was located at the first puncture of the ventricular needle and was drained through a short dural incision, which could have been made just as well through a small trephine opening in the bone.

One patient died during the first visit, without operation, from general meningitis following a ruptured left frontal abscess, discovered at necropsy. A second patient was operated on after the onset of meningitis, and a ruptured abscess of the left temporal lobe was found and drained. Purulent spinal fluid was removed at lumbar puncture before operation. The third fatal case was that of a patient with three right frontal abscesses, who was admitted to the hospital for the relief of general pressure. In this case, one abscess was localized and drained, but two were overlooked. The fungus could not be controlled, and the patient died from septic encephalitis about six weeks after coming under observation. Seven of the nine patients undergoing operation recovered. One patient is still in the hospital, but seems to be free from abscess symptoms. She had an enormous fungus cerebri when admitted to the hospital, from osteomyelitis of the skull following drainage of a right parietal lobe abscess. Two additional abscesses were drained. Another patient who was discharged from the hospital three months ago has left hemiplegia, involving chiefly the arm. One patient has a slight osteomyclitis of the skull following a flap operation. Still another patient, with left frontal abscess, recovered about a year ago from abscess symptoms, but is troubled with slight headache. There are no other cases showing residual symptoms in the series.

10: 264-600 (Jan.) 1925. Part II

Specialization in Surgery. W. J. Mayo, Rochester, Minn.—p. 264.
Evolution of Thoracic Surgery as a Specialty. C. A. Hedblom, Rochester, Minn.—p. 267.
Future of Thoracic Surgery. W. Meyer, New York.—p. 278.
Scope of Thoracic Surgery. A. L. Lockwood, Toronto.—p. 280.
*Treatment of Pulmonary Tuberculosis with Help of Artificial Pneumothorax. S. F. Blanchet, Saranac Lake, N. Y.—p. 306.
Pneumothorax. J. J. Singer, St. Louis.—p. 312.
*Exptrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis. E. Archibald, Montreal.—p. 328.
*Carcinoma of Thoracic Portion of Esophagus. F. Torek, New York.—p. 353.
*Resection of Thoracic Portion of Esophagus for Carcinoma. C. Eggers, New York.—p. 361.
*Experimental Reconstruction of Esophagus with Autogenous Fascia Lata Transplant. D. S. Allen, St. Louis.—p. 374.
*Cautery Pneumectomy for Chronic Suppuration of Lung: Twenty Cases. E. A. Graham, St. Louis.—p. 392.
Abscess of Lung Associated with Mediastinal Tumor. H. Auchincloss, New York.—p. 419.
Chronic Pneumonia or Tumor of Lung. W. Meyer, New York.—p. 431.
Primary Tumors of Lung: Twenty-Seven Cases. L. Eloesser, San Francisco.—p. 445.
Sarcoma Metastasis in Lung Seventeen Years After Primary Growth. E. G. Beck, Chicago.—p. 469.
Significance of Vital Capacity in Intrathoracic Therapy. J. L. Yates, Milwaukee.—p. 477.
Cardiorespiratory Physiology Following Collapse of One Lung by Bronchial Ligation. W. D. Andrus, Cincinnati.—p. 506.
Reaction of Pleura to Particulate Matter, Especially in Presence of Pneumothorax. R. B. Bettman, Chicago.—p. 523.
Cervical Sympathectomy in Angina Pectoris: Three Cases. J. Lilienthal, New York.—p. 531.
Subphrenic Abscess and Its Differential Diagnosis Roentgenologically Considered. L. T. LeWald, New York.—p. 544.
Value of Lateral and Oblique Roentgen Light Exposure in Diagnosis of Thoracic Affections. J. S. Pritchard, Battle Creek, Mich.—p. 557.
Ethylene and Preliminary Medication. J. T. Gwathmey, New York.—p. 568.

Pneumothorax in Treatment of Pulmonary Tuberculosis.—Experience has convinced Blanchet that although artificial pneumothorax must be used in advanced tuberculosis, lasting results rarely follow its employment at this stage. If it is used in moderately advanced cases that fail to respond reasonably soon to the usual treatment, or when, in these cases, cavities are beginning to form, a high percentage of success can confidently be looked for, if adhesions do not interfere with the development of an effective compression. By arresting a well developed or progressive disease, by controlling hemoptysis or preventing its recurrence, a quicker, safer recovery is insured. Also, it is well to emphasize that careful following of the usual sanatorium treatment is absolutely necessary; it adds greatly to a patient's chance of getting the most benefit from artificial pneumothorax treatment. Blanchet has come to believe that there is an optimal length of time during which this compression should be kept up. If, after perhaps two or three years, one is doubtful as to the safety of allowing the lung to reexpand and function again, a thoracoplastic operation, which will make the compression permanent, is definitely indicated. This is particularly true in the case of patients whose general condition is none too good, either because they have had to work or because they have been careless and gone beyond their strength. This, in Blanchet's experience, is not rarely the case. The danger of the compression longer continued is the development of purulent effusion or perforation of the lung.

Extrapleural Thoracoplasty in Treatment of Pulmonary Tuberculosis.—Archibald details his results in forty-five cases of posterior thoracoplasty. In thirty-nine cases a total posterior thoracoplasty was done; in three cases a partial thoracoplasty, supplementing a pneumothorax, was done, and in three cases a partial thoracoplasty was done. The only fatalities occurred in the last group. Two patients died soon after operation, one from cardiac failure on the twelfth day and one from streptococcus abscess on the twenty-first day. In six of these forty-five cases an apicolysis was done at intervals of from six weeks to two and one-half years after the posterior thoracoplasty. Of these, three patients died within two weeks. All three had very advanced cavitation with fibrosis throughout the lung. Archibald says that operation in such cases should be avoided. Results in patients surviving operation over three weeks: more than one year, up to twelve years, twenty-seven cases: cure, six cases; greatly improved, eight cases; moderately improved, two cases; stationary or worse, one case; deaths, eleven. The cause of death was: apicolysis, three cases; tuberculous pneumonia in seventh week, one case, and progress of disease, seven cases. Of sixteen cases under one year, six are greatly improved, four are moderately improved, one is stationary or worse, and in four no opinion can yet be given. One patient died from typhoid in the seventh week after operation.

Carcinoma of Esophagus.—Torek reports a case in which operation was done eleven years ago. The method of operating employed in that case involved a new principle in the mode of surgical attack on the new growth; namely, the exenteration of the esophagus from the thoracic cavity. The patient has been comfortable and happy. The operation also brought out a few technical details, the most important of which probably was the mode of access, consisting in an incision in the seventh intercostal space almost in its entire extent, and a continuation of that incision upward on the back, cutting through the seventh, sixth, fifth and fourth ribs at some point between their angles and their tubercles.

Resection of Esophagus for Carcinoma.—Eggers has operated successfully on a patient with a carcinoma of the esophagus just below the arch of the aorta. The same general technic advised by Torek was followed, differing from it only in details. Several points are stressed. The youth of the patient is of interest (38 years), and, in connection with that, the short history of six weeks' duration. The lesion must naturally have been there considerably longer, but no symptoms appeared until there was actual obstruction. The latter increased so rapidly that at the first roentgen-ray examination it was pronounced almost complete. The result was a loss of 15 pounds (6.8 kg.) in weight in less than two weeks. The patient's condition has been followed closely since he left the hospital. He is gaining steadily, and has become sufficiently strong to want to return to his former occupation.

Reconstruction of Esophagus with Fascia Lata.—The experiments made by Allen indicate that it is possible to remove a section of the esophagus without actually opening its lumen at the time of the operation. The most important feature of the procedure is that infection of the mediastinum by the contents of the esophagus is avoided, both at the time of operation and subsequently. The two stage operation is simple. At the first operation, two ligatures and a sleeve of fascia lata are placed around the esophagus; at the second operation, the two ligatures are tied tightly and the two needle holes in the sleeve of fascia are closed.

Cautery Pneumectomy for Chronic Suppuration of Lung.—Up to the present time, Graham has carried out extensive

cauterizations in twenty cases of chronic lung suppuration. In these cases, the condition had been present in the various individuals for periods of from six to twenty years. They were all totally incapacitated, and many of them had been bedridden for several years. Some of them represented, therefore, the most extreme effects of chronic pulmonary suppuration. Four patients are free from symptoms and completely healed; six are free from symptoms, but with remaining bronchial fistulas. Marked improvement, but with some cough still present, is the result in three cases; two patients are improved; one has not been heard from and four are dead. Of the three who are listed as showing "marked improvement but with some cough still present," two have definite evidence of involvement in another lobe of the lung than the one operated on, a fact which probably accounts for the persistence of some of the symptoms. In these cases, the lobe that showed the most marked pathologic change was the one selected for the cauterization. The two patients still in progress have not yet been discharged from the hospital, but their condition is distinctly improved. The deaths have all been from what have seemed to be accidental causes, three from cerebral complications, and one from pneumonia in the other lung after the operation. Of the cerebral complications, one was suppurative meningitis, occurring three weeks after the last cauterization, and the other two were sudden deaths with general convulsions, occurring soon after operation, apparently from cerebral embolism. There has been no death from infection of the mediastinum or pericardium. This incidence of three cases, or 15 per cent., of cerebral complications is apparently about the same as that which occurs spontaneously in this type of condition. Graham argues that this total mortality, therefore, of four cases, or 20 per cent., can probably not be ascribed entirely to the operation. But, even if it were due to the operation, it is less than one-half the mortality following the ordinary lobectomy, and the percentage of patients who have been relieved completely of their symptoms (50 per cent.) is very much higher than in the published results of lobectomy. In fact, a total of 75 per cent. of all Graham's patients are known to be either entirely well or improved.

Atlantic Medical Journal, Harrisburg, Pa.

28: 195-264 (Jan.) 1925

Individual Practitioner. C. Falkowsky, Jr., Scranton.—p. 195.
Present Situation in Treatment of Syphilis. W. A. Pusey, Chicago.—p. 196.
Postoperative Pulmonary Complications. W. E. Lee, Philadelphia.—p. 198.
Reconstruction of Hip Joint. A. B. Gill, Philadelphia.—p. 204.
Treatment of Headache. A. C. Morgan, Philadelphia.—p. 210.
Disadvantages and Need of Fat in Diet of Infants. J. P. C. Griffith, Philadelphia.—p. 212.
Expectancy in Mitral Stenosis. J. E. Talley and W. H. Lindsey, Philadelphia.—p. 216.
What Doctor Owes Hospital. I. D. Metzger, Pittsburgh.—p. 221.
Incidence of Positive Wassermann Reactions in Prostitutes. R. A. Kilduffe, Los Angeles.—p. 224.
Deafness in Children: Prevention and Treatment. H. Dintenfass, Philadelphia.—p. 225.

Boston Medical and Surgical Journal

192: 43-102 (Jan. 8) 1925

Physiology of Kidney. J. T. Wearn, Boston.—p. 43.
Clinical Studies in Nephritis. W. R. Ohler, Boston.—p. 44.
Blood Chemistry in Chronic Nephritis. J. Jackson, Jr.—p. 48.
*Whooping Cough. T. Madsen, Copenhagen.—p. 50.
Smallpox in United States, Insular Possessions, New England and Massachusetts, 1913-1923. S. B. Woodward, Worcester.—p. 60.
Blindness from Teeth, Tonsils and Accessory Sinuses. L. E. White.—p. 64.
Medical Attention in Connection with Rehabilitation of Injured Employees. J. A. Parks, Massachusetts.—p. 69.

Whooping Cough in Denmark.—Whooping cough, in Denmark, records a far greater number of deaths than typhoid, measles, scarlatina, diphtheria, cerebrospinal meningitis, poliomyelitis, etc. In England and Wales it is only second to measles. In the United States registration area, whooping cough has only third rank, being exceeded by diphtheria and typhoid. Madsen says that his experience in vaccinating for whooping cough encourages the use of that method of treatment to the widest possible extent as soon as a whooping cough epidemic threatens. Everything seems to indicate that it is possible to change the character of the infection to a much milder form. It seems advisable to vaccinate as early as possible even after the disease has broken out; in such cases, just as when quick action is necessary, the vaccine should be given in greatly increasing doses five days in succession.

Journal of Biological Chemistry, Baltimore

287-556 (Dec.) 1924

Estimation of Sugar in Diabetic Urine, Using Dinitrosalicylic Acid. J. M. Sumner and C. V. Noback, Ithaca, N. Y.—p. 287.
Occurrence of Plant Nucleotides in Animal Tissues. W. Jones and M. E. Perkins, Baltimore.—p. 291.
Antirachitic Properties Imparted to Inert Fluids and to Green Vegetables by Ultraviolet Irradiation. A. F. Hess and N. Weinstock, New York.—p. 301.
Nutritive Value of Wheat Plant. E. B. Hart, H. Steenbock, G. C. Humphrey and R. S. Hulce, Madison, Wis.—p. 315.
Estimation of Surface Area of Fetus; Graphic Comparison of Various Surface Area Formulas. I. Sandiford and T. Wheeler, Rochester, Minn.—p. 323.
*Basal Metabolism Before, During and After Pregnancy. I. Sandiford and T. Wheeler, Rochester, Minn.—p. 329.
Iodometric Method for Determination of Sodium in Small Amounts of Serum. B. Kramer and I. Gittleman, Baltimore.—p. 353.
*Determination of Sugar in Small Amounts of Blood. M. Gilbert and J. C. Bock, Milwaukee.—p. 361.
Dietary Requirements for Reproduction. III. Existence of Reproductive Dietary Complex (Vitamin E) in Ethereal Extracts of Yellow Corn, Wheat Embryo, and Hemp Seed. B. Sure, Fayetteville, Ark.—p. 371.
Nature of Sugar in Normal Urine. I. Comparison of Glucose Equivalent of Various Sugars in Different Methods for Determination of Glucose. I. Greenwald, J. Samet and J. Gross, New York.—p. 397.
Id. II. Sugar Excretion on Various Diets and Influence of Diet on Glucose Tolerance; Nature of Action of Insulin. I. Greenwald, J. Gross and J. Samet, New York.—p. 401.
*Acidosis of Operative Anesthesia. A. E. Koehler, Boston.—p. 435.
Effect of Insulin and Muscle Tissue on Glucose in Vitro. C. Lundsgaard and S. A. Holbøll, Copenhagen, Denmark.—p. 453.
*Inactivating Action of Some Fats on Vitamin A in Other Fats. L. S. Fridericia, Copenhagen, Denmark.—p. 471.
Sulphuric Acid Reaction of Butter Fat and Disappearance of Reaction from Vitamin A Containing Butter Fat Through Action of Oxidized Fat. N. Sjörslev, Copenhagen, Denmark.—p. 487.
Metabolism of Tryptophane. I. Synthesis of Racemic Bz-3 Methyltryptophane. W. Robson, Edinburgh, Scotland.—p. 495.
Metabolism Studies with Chaulmoogra Oil. I. Influence of Chaulmoogra Oil on Calcium Metabolism. B. E. Read, New Haven, Conn.—p. 515.
*Id. II. Influence of Hydnocarpates on Urinary Nitrogen Partition in Dog. B. E. Read, New Haven, Conn.—p. 541.
Experiments of Walden Inversion. XI. Substitution by Halogen of Hydroxyl Group in Secondary Octyl Alcohols. A. McKenzie and T. M. A. Tudhope, Dundee, Scotland.—p. 551.

Basal Metabolism Before, During and After Pregnancy.—Data are given by Sandiford and Wheeler on the respiratory metabolism of a normal woman before, during and for six lunar months after pregnancy. The data show, in agreement with those of other investigators, that there is a definite increase in the total heat production during the latter part of pregnancy, in this case beginning with the eighth month and gradually increasing to the tenth lunar month, when the total calories for each hour were 25 per cent. greater than before conception. Calculations for this case, as well as for cases from the literature, indicate that the energy production of a unit mass of the mother's protoplasmic tissue remains unchanged throughout the course of pregnancy, and that such increases in the total heat production as occur are due to the increasing mass of active protoplasmic tissue, consisting in large part of the fetal tissues and in lesser part of maternal structures. There was no increase in heat production during lactation. In fact there was a slight decrease, probably because of the less active life. As the mother gradually resumed her usual activities, the metabolism became almost identical with that before pregnancy. There was no demonstrable loss of energy in transforming the mother's food into milk. There were slight daily irregular variations in the heat production after the reestablishment of menstruation, but none which can be accredited to its influence.

Determination of Sugar in Blood.—A method for the determination of sugar in small amounts of blood is presented by Gilbert and Bock. Small glass tubes, easily made in the laboratory, are used to weigh the samples on the torsion balance. The sugar is determined by a modification of the Folin-Wu procedure. Data are presented to show that pipets of small capacity are not reliable for measurement of blood

samples. Results by the new method agree well with those of the old method.

Acidosis of Operative Anesthesia.—Observations on human subjects undergoing operation under ether or nitrous oxid anesthesia as carried on by Koehler show a considerable degree of acidosis. During the first few minutes of anesthesia there is a sudden marked drop in p_H of the blood after which the decrease is gradual. The sudden increase in hydrogen ion concentration is the cause of the initial hyperpnea. The acidosis is the summation effect of carbon dioxid excess and alkali deficit. The carbon dioxid excess is the result of inefficient respiration probably caused by decreased sensitiveness of the respiratory center. In the closed cone method or with the nitrous oxid machine, the carbon dioxid excess is further augmented by rebreathing. The postoperative inhalation of carbon dioxid causes a marked but temporary increase in the acidosis. The detrimental effect of the acidosis is discussed.

Inactivating Action of Fats on Vitamin A.—Experiments made by Fridericia showed that rats did not grow on an apparently adequate diet when the butter fat yielding the vitamin A of the diet was mixed (after melting) with a brand of hydrogenated whale oil. Experiments showed that the hydrogenated whale oil had no toxic action on the growth of rats but had an inactivating action on the vitamin A of butter fat when the two fats were mixed after melting at a slow temperature. Two hydrogenated vegetable oils (hydrogenated coconut oil and hydrogenated hemp-seed oil) and a nonhydrogenated (coconut oil) vegetable oil showed neither any toxic effect on the growth of rats nor any inactivating action on the vitamin A of butter fat, this action accordingly not being regularly connected with the process of hydrogenating. Untreated abdominal fat from the pig did not inactivate the vitamin A of butter fat. After being heated in thin layers to 102-105 C. for twenty-four hours on exposure to the air, the same pig fat acquired an inactivating action on the vitamin A of butter fat when the two fats were mixed after melting. This inactivating action is supposed to depend on the generation of peroxids in the aerated heated fat, the vitamin A of butter fat being destroyed by these peroxids through oxidation. The bearing of the results on the interpretation of previous experiments and on the manufacture of margarin and some problems in cookery is pointed out.

Influence of Hydnocarpates on Urinary Nitrogen Partition.—Read asserts that chaulmoogra oil or ethyl hydnocarpate administered in various ways in large doses to rabbits produces a marked increase in urinary calcium. Chaulmoogra oil given in small oral doses to pigs produces a marked increase in urinary calcium, and an increase in fecal calcium. Continued administration reverses this effect, and favors calcium retention. Prolonged hypodermic administration of ethyl hydnocarpate in therapeutic doses to dogs decreases the urinary calcium and favors calcium retention. Large intraperitoneal injections decrease the urinary calcium and greatly increase fecal calcium so that there is a hyperexcretion of calcium. Analyses of the phosphorus and fat show that they bear little relationship to the changes in calcium metabolism. Calcium is excreted in some form other than the urinary phosphates or the fecal soaps found in the normal subject. There is observed an increase in the calcium of the blood after the administration of the hydnocarpates to dogs. Large doses administered to rabbits, producing a fatal effect, cause a decrease in blood calcium with tetany. The chemical analysis made shows that there is the development of a tolerance to the original effect of the drug on metabolism, particularly as seen in the lessened local irritant effect on the alimentary canal.

Laryngoscope, St. Louis

34: 929-994 (Dec.) 1924

Studies of Rinne Test; Tuning Fork Stem for Both Bone and Air Conduction. R. Sonnenschein, Chicago.—p. 929.
Ether Treatment of Chronic Suppurative Otitis Media. T. Hubbard, Toledo, Ohio.—p. 941.
Papillary Carcinoma of Inferior Turbinate, Septum and Antrum. S. Knopf, New York.—p. 944.
Simulated Mastoiditis Relieved by Sphenoidectomy. H. W. Lyman, St. Louis.—p. 948.
Bone Fragment in Trachea with Marked Subglottic Edema. M. P. Stiles, Birmingham, Ala.—p. 955.
Correction of Nasal Deformities Following Septum Operations. J. Safian, New York.—p. 957.
What May Be Accomplished Through Nasal (Sphenopalatine, Meckel's) Ganglion in Diagnosis and Treatment of Certain Nasal Conditions. A. M. Alden, St. Louis.—p. 961.
Accessory Sinuses: Conservative Treatment, Based on Anatomic Facts. R. A. Tomassene, Wheeling, W. Va.—p. 968.
Treatment of Brain Abscess. J. E. J. King, New York.—p. 974.

Medical Journal and Record, New York

121: 1-68 (Jan. 7) 1925

Clinical Study of Vascular Spasm. R. S. Reeves, Philadelphia.—p. 1.
Galvanic and Faradic Electricity and Derived Currents in General Practice. F. T. Woodbury, New York.—p. 3.
Old Age Factor in Psycho-Analytical Therapy. S. E. Jelliffe, New York.—p. 7.
Cases of Bile Tract Disease Considered Surgically. W. L. Barber, Jr., Waterbury, Conn.—p. 12.
Value of Blood Transfusion in Subacute and Chronic Infections. M. L. Janes, New York.—p. 16.
*Method of Resuscitation in Asphyxia Neonatorum. S. Reisler, Indianapolis.—p. 18.
Surgical Treatment of Abscess of Lung. J. F. Graham, Brooklyn.—p. 20.
Enuresis. S. A. Moss, New York.—p. 22.
Intravenous Therapy: Retrospect. W. F. Dutton, Amarillo, Texas.—p. 24.
Intravenous Needle. W. A. Steel, Philadelphia.—p. 26.
Abdominal Tuberculosis and Intestinal Stasis. J. Taylor, Glasgow, Scotland.—p. 27.
Certain Types of Advanced Tuberculosis: Economic Asset. L. S. Peters, Albuquerque, N. M.—p. 29.
Indications for Thoracoplasty in Pulmonary Tuberculosis. J. B. Amberson, Jr., Loomis, N. Y.—p. 32.
Resolution and Healing in Pulmonary Tuberculosis. R. A. Bendove, Bedford Hills, N. Y.—p. 36.
Neuropsychiatry in Tuberculosis. B. J. Weigel, Albuquerque, N. M.—p. 40.

Resuscitation in Asphyxia Neonatorum.—Reisler describes a method of resuscitation of the new-born consisting in the insufflation of the vapors of aromatic spirit of ammonia, first improvised and used successfully by him in a case of asphyxia pallida neonatorum, which resisted all efforts at resuscitation by the standard methods. Eight cases have now been treated in this manner. On a piece of gauze, wrung out of warm water, three or four drops of aromatic spirit of ammonia are put, the gauze is placed over the mouth of the infant, and mouth to mouth insufflation is practiced at the rate of about thirty respirations a minute, being careful not to overdistend the infant's lungs, and assisting expiration by slight pressure over the chest. More ammonia is added as insufflation proceeds, using only three or four drops at a time.

Minnesota Medicine, St. Paul

8: 1-76 (Jan.) 1925

*Unusual Features of Carcinoma. H. E. Robertson, Rochester.—p. 1.
Destructive and Constructive Surgery of Malignancy. H. P. Ritchie, St. Paul.—p. 4.
Relative Values of Surgery and Radiotherapy. W. J. Mayo, Rochester.—p. 7.
What Laity Should Know About Cancer. W. A. O'Brien, Minneapolis.—p. 11.
One Hundred Cases of Amebiasis Observed at U. S. Veterans' Hospital No. 65. T. D. Tuttle, St. Paul.—p. 13.
Present Status of Milk Pasteurization in Minnesota. H. A. Whittaker and R. W. Archibald, Minneapolis.—p. 21.
Routine Examination and Management of New-Born. O. W. Rowe, Duluth.—p. 24.
Care and Treatment of Juvenile Diabetes. F. W. Schultz, Minneapolis.—p. 30.
Signs of Times; Their Causes and Effect. W. W. Lewis, St. Paul.—p. 34.
Medical Aspects of Behavior Problems in Children. L. G. Lowrey, Minneapolis.—p. 39.
Differential Diagnosis of Pulmonary Disease. M. G. Milan, Warren.—p. 47.
Fractures of Spine. E. S. Geist, Minneapolis.—p. 51.

Unusual Feature of Carcinoma.—Robertson believes that the statement is justified that in the adult, after the age of 35 at least, there exist myriads of potentially malignant growths. The wonder is not that a carcinoma develops or that multiple carcinomas are occasionally seen, but that any individual reaches the full three score years and ten without being overwhelmed by carcinomas of almost every variety. The answer must consist in postulating an inhibitory influence, local, general, or both, on the disorderly growth of

epithelial cells. Instances of this phenomenon are a daily occurrence, but it has been insufficiently stressed. Careful study of some of these tumors and their metastatic productions shows that this inhibitory influence occasionally wavers; it is not a consistent property of any given organ, nor of the body as a whole. Under certain conditions the tumor's growth is quite mainifestly inhibited, but later on the bars are down and the carcinoma runs wild. These carcinomatous bonds deserve much more careful study. Manifestly they are an inherent property of body cells or juices, varying from time to time, and are the only real intrinsic defensive mechanism against carcinoma.

New Orleans Medical and Surgical Journal

77: 259-300 (Jan.) 1925

Use and Abuse of Roentgen Rays in Treatment of Common Skin Diseases. E. D. Crutchfield, Galveston, Texas.—p. 259.
Endocarditis from Standpoint of Prevention. J. B. Howell, Canton, Miss.—p. 263.
Control of Tuberculosis in Louisiana. W. J. Durel, New Orleans.—p. 267.
Treatment of Puerperal Sepsis. S. H. Hairston, Meridian, Miss.—p. 272.
*Hematuria Due to Unilateral Glomerulonephritis. P. J. Kahle, New Orleans.—p. 275.
Tuberculosis in Infancy and Early Childhood. R. O. Womack, Jackson, Miss.—p. 278.
*Splenectomy in Purpura. I. I. Lemann and I. Cohn, New Orleans.—p. 282.
Treatment of Prostatic Hypertrophy. P. G. Gamble, Greenville, Miss.—p. 284.

Hematuria Due to Unilateral Glomerulonephritis.—Hematuria due to glomerulonephritis is not uncommon, but severe hematuria due to unilateral glomerulonephritis, or to glomerulonephritis with arteriosclerosis of the glomeruli, is uncommon. In neither of the two cases cited by Kahle was the cause of hemorrhage determined until sections of the kidney tissue had been made. In one case, a preoperative diagnosis of hypernephroma was made, while, in the other, although no tubercle bacilli were found, it was thought that a tuberculous pyonephrosis was the probable explanation of the severe hemorrhage. In neither of these cases, has the pathologic report suggested the etiology of the glomerulonephritis, nor has it, in one case at least, excluded a focal embolic glomerulonephritis as the cause of the hematuria.

Splenectomy in Purpura.—Lemann and Cohn report the case of a child, aged 5½ years, on whom a splenectomy was done for persistent purpura in June, 1923. There has been no recurrence of the purpura. The child has grown and developed. The platelets now number 140,000. At the time of operation there were none.

Radiology, St. Paul

3: 457-544 (Dec.) 1924

Roentgenographic Types of Sarcoma of Long Bones. H. W. Meyerding, Rochester, Minn.—p. 457.
General Aspect of Tuberculosis as Presented by Roentgen-Rays. J. D. MacRae, Asheville, N. C.—p. 464.
Study of Miliary Tuberculosis by Serial Radiographic Examination. L. R. Sante, St. Louis.—p. 467.
Indications for Use of Therapeutic Pneumothorax in Lung Abscess. H. M. Rich, Detroit.—p. 472.
Pathognomonic Radiographic Finding in Early Pulmonary Tuberculosis. R. H. Hayes and I. S. Trostler, Chicago.—p. 474.
Scattering of Roentgen Rays. A. H. Compton, Chicago.—p. 479.
Sacro-Iliac Joint: Diagnosis by Roentgen Ray. B. C. Darling, New York.—p. 486.
Acromegaly Following Gigantism: Case Treated by Roentgen Ray. C. D. Enfield, Louisville, Ky.—p. 492.
Management of Inoperable Cancer Patient. H. J. Ullmann, Santa Barbara, Calif.—p. 497.
Advanced Trouble Shooting. C. B. Horsley, Pittsburgh.—p. 502.
Measurements of Quality and Quantity of Roentgen Rays in Deep Therapy. E. A. Pohle, Cleveland.—p. 504.
Roentgen Ray as Means of Safeguarding Antrum of Highmore During Extraction of Teeth. B. S. Gardner, Rochester, Minn.—p. 507.
Acute Dilatation of Stomach. W. E. Hart, Los Angeles.—p. 509.

South Carolina Medical Association Journal, Greenville

20: 295-322 (Dec.) 1924

Development of Medical Education in United States. N. P. Colwell, Chicago.—p. 300.
Prostatic Surgery. N. B. Edgerton, Columbia.—p. 305.
Rabies. G. McF. Mood, Charleston.—p. 310.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

8: 561-624 (Dec.) 1924

Focal Illumination of Eye with Special Reference to Clinical Use of Gullstrand's Slit Lamp. T. H. Butler, Birmingham.—p. 561.

9: 1-48 (Jan.) 1925

Ocular Leprosy. J. Wood.—p. 1.
Hydatid Cysts of Orbit. J. Wood.—p. 4.
Chronic Iridocyclitis: Atrophic Patches in Iris. M. S. Mayou.—p. 7.
Alteration of Power of Cylinder When Used for Close Work. A. S. Percival.—p. 8.
Epithelial Dystrophy of Cornea. H. Friedenwald and J. S. Friedenwald.—p. 14.
Uncommon Luxation of Lens. J. S. Steijn.—p. 20.

British Medical Journal, London

2: 1185-1222 (Dec. 27) 1924

Teaching of Obstetrics. B. P. Watson.—p. 1185.
Clinical Use of Sphygmomanometer. K. D. Wilkinson.—p. 1189.
*Chronic Intestinal Stasis and Epilepsy. A. W. Robertson.—p. 1191.
Importance of Early Treatment of Acute Otitis. J. F. O'Malley.—p. 1193.
*Radium Therapy in Cancer of Esophagus. W. Hill.—p. 1196.
Some Osseous Growths of Nasal and Adjacent Bones. W. H. Kelson.—p. 1197.

Chronic Intestinal Stasis as Cause of Epilepsy.—Robertson again presses the importance of chronic intestinal stasis as a factor in the pathogenesis of epilepsy. He has studied in great detail twenty-seven cases of epilepsy. In all of these a full personal and family history was obtained, and each patient was examined, system by system, for indications or history of chronic toxic conditions. The blood, menstrual blood, urine, and stools were examined, and the condition of the uterus, urinary bladder, teeth, tonsils, nares, and sinuses investigated. Thirteen cases were roentgenographed with bismuth meal and barium enema, and eight of these were operated on for conditions of advanced stasis affecting the general health. In every epileptic examined the clinical and laboratory evidence was eloquent of considerable chronic intestinal stasis and widespread mucosal catarrh of the intestine. Treatment has been directed in every case primarily to the relief of the intestinal condition. Robertson asserts that the methods of treatment adopted have yielded results which go some way toward proving a close association between demonstrable chronic intestinal stasis and epilepsy.

Radium Therapy in Cancer of Esophagus.—Hill has treated seventy-seven cases of malignant stricture in the esophagus by radium. The number of applications varied in individual cases from one to eight. Two thirds of the cases had more than one application. In about one-third of the cases there was remarkable improvement, in another third there was very substantial improvement, and in the remaining third the improvement was very slight and fleeting or there was no improvement at all or the patient was rather worse than before. In three cases the measure was followed by fatal results within a few days of the application.

China Medical Journal, Shanghai

38: 877-960 (Nov.) 1924.

*Mortality of Chinese in United States, Hawaii and Philippines. C. E. A. Winslow and Z. W. Koh.—p. 877.
Grattage in Treatment of Trachoma. C. A. Hayes and F. Oldt.—p. 899.
Reactions of Miracidia of Schistosoma Japonicum and S. Haematobium in Presence of Their Intermediate Hosts. E. C. Faust.—p. 906.
Modification of Babcock Method for Determination of Fat in Small Samples of Milk. E. Tso.—p. 913.
A Typical Case of Meningococcic Meningitis. A. V. Scott.—p. 915.
Case of Eclampsia with Hydatidiform Mole. G. N. Herring.—p. 917.
Improvised Autoclave for Hospital Laboratories. C. S. Gibbs—p. 920.

Mortality of Chinese in United States.—Statistical data were analyzed by Winslow and Koh. They show that the crude death rate of the Chinese in the United States is very high (27.1 per thousand, for the states of California, Oregon and Washington in 1919-1920, as against 12.4 for the total population of these states). This excessive mortality is in large part due to the abnormal age distribution of the Chinese in the United States. Standardization, on the basis of the

standard million of England and Wales in 1901, reduces the Chinese rate to 20.0 and the total rate for the entire population of the three states to 11.4. In the city of Manila the crude mortality for the Chinese is much lower than in the United States, and in Hawaii it is lower still. The comparative figures for 1920 are: registration states, 24.3; Manila, 18.4; Hawaii, 16.9. In both Manila and Hawaii the Chinese rates are intermediate between those for Caucasians and those for the native races (Hawaiian and Filipino). Standardization reduces the Chinese death rate in Hawaii for 1919-1920 from 15.8 to 15.3, while it increases the rate for Caucasians from 12.5 to 13.2, leaving a relatively small difference between the two race stocks. Analysis of deaths by cause indicates that the Chinese in all three reigons studied exhibit a consistent and apparently characteristic excessive mortality from tuberculosis, from circulatory diseases and from genito-urinary diseases, as compared with Caucasians. It would appear that so far as these diseases are concerned inherent physical characteristics or racial habits must exert a specific predisposing influence. The excessive mortality from acute respiratory diseases and from external diseases which appear among the Chinese in the coast states are, on the other hand, apparently due to local climatic or social and environmental conditions or to the particular type of Chinese represented in the United States, since death rates from these causes are not excessive in Hawaii or in Manila.

Indian Medical Gazette, Calcutta

59: 593-644 (Dec.) 1924

*Herpetomonads Found in Gut of Sandfly, Phlebotomus Argentipes, Fed on Kalazar Patients. R. Knowles, L. E. Napier and R. O. A. Smith.—p. 593.
Ankylosis of Joints. W. L. Harnett.—p. 597.
Some Uses of Electrolytic Chlorin in Hospital Work. A. H. Napier.—p. 602.
Canine Leishmaniasis in Bombay. K. Basadur, C. R. Avari and F. P. Mackie.—p. 604.
Testing of Insulin in India. J. Taylor.—p. 605.
Recent Work on Lobar Pneumonia. H. H. King.—p. 607.
Life History of Herpetomonas Muscae Domesticae. W. C. Ross and M. Hussian.—p. 614.
Cases of Relapsing Fever. K. V. Raju.—p. 616.
Fish Bone in Larynogopharynx. F. D. Bana.—p. 618.

Herpetomonads in Kala-Azar Blood.—In ten out of eleven consecutive experiments done by Knowles, Napier and Smith, female laboratory bred *P. argentipes*, fed on the parasite containing blood of kala-azar patients, showed typical herpetomonad forms in the foregut or midgut at the third to the fifth day after the feed. No less than twenty-five out of fifty-six such fed flies showed herpetomonads, and in six instances the injection was a heavy one, although the patient's blood films had shown only scanty *L. donovani* present. On dissection and examination of 811 control sandflies, including both *P. minutes* and *P. argentipes*, the only natural infections encountered have been once a *Rickettsia*, three times a *Bodo*, and once a doubtful spirochete. Nothing resembling a herpetomonad has been encountered. On dissection and examination of forty-six other control female *P. argentipes*, fed on persons not suffering from kala-azar, no protozoa were found. It is concluded that *L. donovani* passes into its flagellate form in the gut of *P. argentipes* under suitable conditions of atmospheric temperature and humidity.

Japan Medical World, Tokyo

4: 311-342 (Dec. 15) 1924

*Pure Cultivation of Germ of Typhus Fever. S. Kusama, S. Yoshioka and K. Ando.—p. 311.
Serologic Studies of Tumors. T. Oguchi.—p. 317.

Cultivation of Typhus Germ.—Kusama, Yoshioka and Ando obtained pure cultures of two strains of identical new specimens of a micro-organism by the ascites broth cultivation of pieces of the kidney tissues of a Japanese monkey that had been infected by the inoculation of two strains of passage viruses of typhus fever. This recovered micro-organism caused a like febrile attack in the Japanese monkey as the passage virus did, and the anatomic and histologic changes were also identical. Moreover, the animal that had tolerated the febrile attack by the recovered micro-organism had been found to have an immunity against the passage virus of typhus fever, and vice versa. From these experimental data the authors conclude that this micro-organism is the cause of typhus fever. Its identity is still unknown.

Japanese Journal of Neurology and Psychiatry, Tokyo

1: 1-139 (Sept.) 1924

*Psychiatric Observations of Earthquake Catastrophe of Tokyo and Vicinity. A. Komine and A. Maki.—p. 7.
Theory of Decrementless Conduction of Nerve Impulse. G. Kato.—p. 9.
Is There Any "Specificity" in Nerve Conduction According to Species of Animals? G. Kato and S. Shizume.—p. 28.
Biostatistical Observation of Schizophrenic Psychoses. T. Saito.—p. 39.
Pseudohypercytemia. S. Uyematsu.—p. 51.
Noxisensibility (Noxireflex) of Thoracic and Abdominal Organs. I. Kubo.—p. 64.

Earthquake as Cause of Psychoses.—Komine and Maki review four cases of so-called emotional psychoses incident to the Tokyo earthquake. The cases have four points in common: (1) acute onset of the psychic symptoms; (2) more or less pronounced cloudiness of consciousness; (3) restlessness, often accompanied by anxiety, and (4) favorable prognosis, recovering mostly within one month. The symptoms of the war neurosis observed during the World War are strikingly like those of the authors' cases.

Journal of Biochemistry, Tokyo

4: 1-184 (July) 1924

Relation Between Absorption of Carbohydrate and Blood Sugar. T. Horiuchi.—p. 1.
Technic of Bang's Micro-Kjeldahl Method. S. Kasamori.—p. 33.
Influence of Nutritive Fats on Chemical Nature of Fats in Animal Body. E. Shioji.—p. 43.
Lipin Deposition in Tissues Under Various Circumstances. C. Morita.—p. 73.
Partition of Starches by Amylase. II. K. Harada.—p. 123.
Effect of Carbohydrate Deficient Diet and of Epinephrin on Sugar Excretion Curve. M. Nakayama.—p. 139.
Effect of Leukocytosis on Uric Acid Excretion. H. S. Shim.—p. 173.

Journal of Obstetrics and Gynæcology of British Empire, Manchester

31: 369-536 (Autumn Number) 1924

Hermaphroditism in Pig. F. A. E. Crew.—p. 369.
*Primary Chorio-Epithelioma of Ovary. D. Dougal.—p. 387.
Case of Complete Fibromyomatosis of Corpus Uteri. H. L. Murray and E. Glynn.—p. 398.
Paravaginal Lipoma Weighing Seventeen Ounces. H. L. Murray.—p. 402.
*Telangiectatic Fibroma of Labium Majus. J. H. Ferguson.—p. 404.
Case of Ovarian Pregnancy. A. L. Robinson.—p. 410.
Hypertrophic Elongation of Cervix Uteri Following Ventral Fixation for Prolapse. G. FitzGibbon.—p. 412.
Ectopic Gestation in Chinese Woman. A. W. Woo.—p. 414.

Primary Chorio-Epithelioma of Ovary.—Dougal reports one case and reviews ten cases of chorio-epithelioma of the ovary and five of the ligament, already on record. In his case there was recurrence within five weeks after operation. Of the remaining ten cases seven were fatal, the majority soon after operation; three patients recovered. Of the recoveries, one patient was well two years and another seven months after operation. No details are available in the third case.

Telangiectatic Fibroma of Labium Majus.—The tumor in Ferguson's case was densely adherent to the surrounding parts, especially posteriorly. In its lower part the growth was in close relationship to the anterior wall of the rectum, and it extended upward and forward until the upper limit lay well behind the symphysis pubis. During the process of dissecting it out the tumor gave the impression, both from its appearance and from its consistence, that it was a piece of intestine. After removal, the tumor was found to consist of solid edematous-looking tissue, measuring 2 feet 2 inches (66 cm.) in length; at its lower part it measured 3 inches in diameter, tapering off till where it lay behind the pubes it was about the thickness of a finger. There was no lumen. A smaller portion of the tumor was found lying near the rectal wall, apparently separate from the main mass, and this was also removed. Sections showed the tumor to be a telangiectatic fibromyoma with hyaline degeneration and marked edema. Angiomatous formations, both capillary and cavernous, focal areas consisting of foreign body giant cells around the remaining strands of the dissociated ligatures, and

a few nerve twigs were also present. No evidence of gland elements could be found in the portions sectioned. Only two similar cases are said to be on record.

Journal of State Medicine, London

32: 551-600 (Dec.) 1924

International Aspect of Quarantine Regulations. E. W. Hope.—p. 551.
Bread-Bakers' Itch. R. P. White.—p. 556.
*Nutritive Value of Stored Food. C. M. Dugdale.—p. 564.
Illumination of Factories. L. Gaster.—p. 574.
Serum Treatment of Type I Cases of Pneumonia. A. B. Wadsworth. —p. 582.
Efficiency in Refuse Disposal. G. M. Flood.—p. 585.

Nutritive Value of Stored Food.—The evidence obtained by Dugdale as to the changes which take place in foods stored for some time, seems to show that there is no ground for apprehension lest the increased consumption of such foods should have ill effects. The chemical changes in dried foods are probably minimized particularly where the coagulation of the proteins is prevented; this is due to the fact that the conditions of storage are unfavorable to enzyme as well as bacterial action. The chemical changes in canned foods are those which are found in cooked foods generally; in none of these foods is there evidence to indicate that considerable changes occur in those chemical constituents to which the foods owe their tissue-building or energy value. Many feeding experiments have shown that during cooking, foods lose some part of their food value in respect of these accessory factors.

Journal of Physiology, London

59: 259-394 (Dec. 23) 1924

*Twenty-Four Hour Observations on Metabolism of Normal and Starving Subjects. I. Cohen and E. C. Dodds.—p. 259.
*Influence of Carbon Dioxid on Absorption of Alcohol by Gastric Mucosa. N. Edkins and M. M. Murray.—p. 271.
*Influence of Ovary on Pituitary Secretion: Probable Factor in Parturition. W. E. Dixon and F. H. A. Marshall.—p. 276.
Influence of Insulin on Blood Sugar in Heart-Lung Preparation. F. Plattner.—p. 289.
Formation of V Wave in Venous Pulse. D. T. Barry.—p. 293.
Heat Regulation and Water Exchange. V. Phase of Blood Dilution in Man. H. G. Barbour, N. M. Loomis, R. W. Frankman and J. H. Warner.—p. 300.
Id. VI. Mobilization of Water and Salt in Warm Environments. W. F. Hamilton, H. G. Barbour and N. M. Loomis.—p. 306.
Mechanism of Splenic Reaction to General Carbon Monoxid Poisoning. S. de Boer and D. C. Carroll.—p. 312.
Latent Glandular Hermaphroditism. New "Unbolting" Experiments. A. Lipschütz.—p. 333.
Conditions Affecting Perfusion of Isolated Mammalian Organs. F. Eichholtz and E. B. Verney.—p. 340.
Adjustment of Buoyancy of Larva of Corethra Plumicornis. G. C. C. Damant.—p. 345.
Migration of Ova in Rabbit. A. S. Parkes.—p. 357.
Effect of Certain Changes in Perfusate on Isolated Auricles of Rabbit. E. C. Andrus.—p. 361.
Respiration and Circulation of Cat. IV. Heart Output During Respiratory Obstruction. A. St. G. Huggett.—p. 373.
Significance of Action of Pituitary Extract on Splenic Volume. S. de Boer and D. C. Carroll.—p. 381.
Action of Epinephrin on Central Nervous System. A. St. G. Huggett and J. Mellanby.—p. 387.

Metabolism of Normal and Starving Subjects.—The urine of five normal men, three taking food and two starving, was examined by Cohen and Dodds at half-hourly intervals for twenty-four hours. The majority of the blood constituents remained remarkably constant over a given period. The urea and nitrogen excretion were increased within two hours of the first meal in the day. After this rise, it was impossible to recognize the effect of individual meals, since the curves showed irregular plateaus from breakfast to tea time. The evidence supplied by the curves seemed to support the view that an alkaline tide is associated with meals, and, more particularly, with gastric secretion. After breakfast, the following series of changes were found to occur: (1) a rise in the alveolar carbon dioxid tension, which has been shown to correspond with the secretion of hydrochloric acid from the stomach; (2) a slight rise in the p_H of the urine; (3) a fall in the A+N value; (4) a fall in the ammonia coefficient, and (5) a rise in the nitrogen coefficient. These changes were all reversed a little later, when pancreatic secretion began to flow. That the later meals of the day were not followed by such clear-cut changes found explanation in the fact that the alkaline tide of such a meal was superimposed on the acid tide of the previous meal. Another interesting point is that evidence of acidosis was present even after so short a period of starvation as twenty-four hours. The urinary diastase content was quite independent of the intake of food. All the results emphasize the uselessness of analyzing isolated specimens of urine, and of basing conclusions on short time observations without rigid starvation controls.

Influence of Carbon Dioxid on Absorption of Alcohol.—Edkins and Murray conclude that the presence of carbon dioxid in the alcoholic solution introduced hastens the rate of absorption of alcohol by the stomach. The presence of alcohol also causes the carbon dioxid to disappear more rapidly and completely, and prevents the liquid in the stomach equilibrating with the carbon dioxid tension of the tissues.

Influence of Ovary on Pituitary Secretion.—The phenomena attending the termination of pseudopregnancy are cited by Dixon and Marshall as pointing to the conclusion that the occurrence of a certain stage in the cyclic activity of the ovary is a factor in parturition. There is no evidence that the ovarian secretion brings about parturition by acting directly on the muscles of the uterus. The secretion of the pituitary has a definite specific action on the muscle of the uterus. The secretion of the ovary in the absence of fully formed (and therefore presumably functional) corpora lutea has a definite specific stimulating effect in promoting pituitary secretion. The secretion of the ovary in the presence of such corpora lutea, on the other hand, has no such effect, its action on the pituitary gland being completely negative. The corpus luteum so dominates the ovarian metabolism during pregnancy as to inhibit the normal ovarian secretion; but with the involution of the corpus luteum at the close of pregnancy the uterus shows an increasing irritability, and eventually, when the normal ovarian endocrine mechanism is sufficiently reestablished, the secretion, working through the intermediation of the pituitary, becomes an important factor in bringing about labor. The action of the ovary on the pituitary undergoes a similar variation in the absence of pregnancy and during the estrous cycle, according to whether corpora lutea are present or absent.

Journal of Tropical Medicine and Hygiene, London

27: 315-332 (Dec. 1) 1924

Cupric and Cyanocupric Preparations in Therapy of Tuberculosis and Leprosy. F. Rho.—p. 315.
Treatment of Malaria. V. S. Hodson.—p. 321.
Bilharzia. F. G. Cawston.—p. 322.
New Type of Blastomycosis Cutis (Furunculosis Cryptococcica, Folliculitis Decalvans Cryptococcica). A. Castellani.—p. 326.

27: 333-352 (Dec. 15) 1924

Etiology of Blackwater Fever. W. M. Hewetson.—p. 333.
*Treatment of Scorpion Sting. N. A. D. Sharp.—p. 336.
Human Schistosomiasis in India. J. P. Cullen.—p. 337.

Treatment of Scorpion Sting.—The treatment employed by Alex is directed to the relief of pain due to scorpion sting. He injects 1 c.c. of procain and epinephrin, the former 5 per cent. and the latter 1:1,000, into the wound, and before the needle is withdrawn the pain has disappeared. He also made the injection in a case of fish sting and suggests that it might be of benefit in the treatment of snake bite.

Lancet, London

2: 1323-1370 (Dec. 27) 1924

*Phenomena Counterfeiting Organic Heart Disease. C. F. Coombs. —p. 1323.
*Pulmonary Tuberculosis in Childhood. J. A. Watt.—p. 1327.
*Bronchopulmonary Spirochetosis. Y. Schwarz.—p. 1331.
*Trigonitis as Cause of Irritable Bladder. T. E. Hammond.—p. 1334.
*Chemical Composition of Blood During Labor. E. C. P. Williams. p. 1336.

Phenomena Counterfeiting Organic Heart Disease.—Coombs discusses a variety of conditions, such as cardiac pain, palpitation, murmurs, etc., which the patient regards as evidence of heart disease but in reality are not such at all. He stresses the danger of errors in diagnosis in these cases.

Pulmonary Tuberculosis in Childhood.—Of 165 children suffering from pulmonary tuberculosis admitted to the Derby-

shire Sanatorium between 1918 and 1923, Watt says, 117 had hilum tuberculosis and forty-eight had adult forms of pulmonary tuberculosis (including lobar, apical, etc.). Only one child in the first group is dead, whereas eighteen in the second group have died. Hilum tuberculosis in children, if confined to the thoracic glands, is usually a benign disease, the activity covering a period of from twelve to eighteen months, and nearly all patients recover. The infection is so mild that it is usually not recognized, and most often causes little or no disturbance to health. Watt says it should be looked on as an inevitable, and possibly a beneficent accompaniment of communal life. If we were not immunized in childhood we might die like primitive races and American Indians. When glandular disease spreads into the lung, it extends slowly in children of school age, smoldering on for years, often unrecognized, and waking into slight activity with each fresh catarrh. There is evidence accumulating that hilum tuberculosis may develop in adolescence into the adult type. The spread of tuberculous disease from the hilum toward the upper lobes is often seen, and its development can be recorded in a series of radiograms. Watt has seen not a few cases, suspected ten years ago to be suffering from hilum tuberculosis, which have reached the age of adolescence and died from the ordinary adult type of disease. From this point of view the average duration of the disease from infection to death may be put at fifteen to twenty years.

Bronchopulmonary Spirochetosis.—Schwarz reports six cases, all having some cough and sputum, sometimes streaked with blood, pyorrhea alveolaris always, and few or no pulmonary signs. Spirochetes of Castellani were always visible with the ultramicroscope or after staining; there was no fever, and, in general, the symptoms were very benign. The treatment was the same, neo-arsphenamin, with recovery in each case.

Trigonitis as Cause of Irritable Bladder.—Four cases of trigonitis are reported by Hammond. Trigonitis is a condition associated with severe bladder symptoms but few changes in the urine. Cystoscopy shows congestion limited to the trigon. No pathologic changes are detected in the neighboring pelvic organs. It resists all those remedies that are beneficial in chronic cystitis. The application of diathermy to the trigon produces an immediate improvement in the symptoms.

Composition of Blood During Labor.—Forty cases have been examined by Williams during and after labor, some of whom have also undergone regular blood examinations during pregnancy. The blood urea, nonprotein nitrogen and diastase were estimated. In half the number of cases the blood taken was during the first stage of labor, in the other half just before delivery. There is an appreciable rise in the blood urea and nonprotein nitrogen during labor in normal cases, the average urea content changing from 19.0 mg. per cent. to 28.2 mg. per cent.

Medical Journal of Australia, Sydney

2: 591-616 (Dec. 6) 1924

Medical Aspect of Duodenal Ulcer. S. Gillies.—p. 591.
Duodenal Ulcer. J. L. McKelvey.—p. 594.
Present Position in Diagnosis and Treatment of Chronic Gastric and Duodenal Ulcer. R. B. P. Monson.—p. 597.
Blood Pressure Charts as an Aid to Diagnosis, Prognosis and Treatment in Albuminuria of Pregnancy and Eclampsia. J. C. Windeyer.—p. 600.
*Unusual Accident Causing Perforation of Bladder and Bowel. W. J. Hull.—p. 605.
Case of Bilharziasis Endemic in Australia. E. P. Holland and E. A. Woodward.—p. 606.

2: 617-644 (Dec. 13) 1924

Kidney Function in Health and Disease. J. V. Duhig.—p. 617.
Vicious Circles in Psychoses. J. Bostock.—p. 622.
Epithelioma of Penis: Three Cases. W. R. Angus.—p. 626.
Bilateral Hypertrophy of Seventh Cervical Transverse Process with Bilateral Rudimentary Accessory Rib. S. H. Scougall.—p. 628.

Traumatic Perforation of Bladder and Bowel.—Hull records the case of a man who threw a pitchfork with a short handle (about 3 feet 6 inches long) off a low wagon and immediately jumped off after it. The pitchfolk was thrown prongs downward, but, instead of falling, it stood perpendicular for a moment and the man jumped onto the perpendicular handle. The handle was 2.5 cm. in diameter and had a rough, rounded end. It tore through his trousers and, entering the anus penetrated the body, according to the patient, to a distance of 37.5 cm. (15 inches). The man pulled it out and then drove his team of six horses to the stable, a distance of a quarter of a mile. He unharnessed the horses and walked home, another 200 yards, having to cross a steep, dry creek on the way. He was brought to Hull, a distance of 20 miles, by car, arriving seven hours after the accident. He was suffering from severe pain in the abdomen and perineum. He was very thirsty, and drank "gallons" of water between the time of the accident and his arrival at the hospital, but he had passed no urine. The anus was bruised all round, and there was blood about the perineum, with a distinct smell of urine about it. The abdominal muscles were hard, and there was dulness in the flanks when the patient was in the prone position. His pulse was 96 and temperature 37.2 C. (99 F.); the respirations numbered 20 to the minute. Hull passed a catheter into the bladder and obtained about 90 c.c. of blood-stained urine. With the patient in a modified Trendelenburg position, Hull made an incision in the midline suprapubically. As soon as the peritoneum was opened, air under pressure blew out. The abdominal cavity had a considerable quantity of blood and fluid in it, and this was mopped out. A jagged tear, which admitted two fingers easily, was present in the top of the bladder. A similar tear was present in the base of the bladder, about 2.5 cm. behind the urethral opening and in the midline. Through these tears the fingers could be passed from the abdominal cavity, through the bladder, into the rectum. The appendix and meso-appendix were acutely inflamed. No injury to the small intestines was found. Hull removed the appendix and stitched the tear in the top of the bladder with three layers of sutures, having decided to leave the tear between the base of the bladder and the rectum alone. A catheter was secured in the bladder through the penis, and the abdominal wall was sutured without drainage. The catheter was removed from the penis after three days, very little urine having passed through it, practically all urine escaping through the rectum. On the fourteenth day, Hull irrigated the bladder with 1:5,000 solution of potassium permanganate, as there was a little pus in the urine from the rectum. The next afternoon (the fifteenth) the patient began to pass urine freely by the urethra, and from then on he made an uneventful recovery, passing all urine by the natural route.

Annales de l'Institut Pasteur, Paris

38: 1053-1139 (Dec.) 1924

*Trypanosomiasis in Kamerun. Letonturier et al.—p. 1053.
Aseptic Transvasation of Sterile Fluids. Stassano.—p. 1101.

Prophylaxis of Trypanosomiasis in the Kamerun District.—This illustrated article describes the traveling laboratory and its work. Since 1920 the French have thus visited 111,122 out of the total population of 123,780 in the district. An average of 30 per cent. were found infected, with a mortality of 15 per cent. The numerous epidemic foci seem to be spreading like a drop of oil, it is said, but lumbar puncture in 500 cases demonstrated that about 50 per cent. were in the first stage of the disease, and this can be effectually combated with atoxyl, neo-arsphenamin and tartar emetic. The main thing is to detect the disease in this first phase, and this requires a medical staff condemned to a nomadic life. A volunteer service with special training is indispensable.

Archives Franco-Belges de Chirurgie, Brussels

27: 661-848 (Sept.) 1924

Treatment of Fracture of Neck of Femur. A. Lambotte.—p. 755.
Fracture of Humerus by Contraction of Muscles. Rouvillois and Clavelin.—p. 759.
*Rib Graft in Pott's Disease. A. Gutierrez.—p. 768.
*Muscle Sign of Pressure on the Brain. G. Ferry.—p. 777.
Treatment of Fracture of Elbow in Children. A. van Haelst.—p. 786.
Pathogenesis of Schlatter's Disease. M. van Neck.—p. 791.
Reconstruction of Fractured Bone. M. van Neck.—p. 793.
Bone Graft to Replace Heel-Bone. M. van Neck.—p. 797.
Laceration of Internal Semilunar Cartilage in Knee. Peremans.—p. 804.

Rib Implant in Tuberculous Spondylitis.—Gutierrez prefers to use a rib implant in Pott's disease, or injuries of the spine,

on account of its structure, length and flexibility and the vicinity to the spine. Exceptionally satisfactory results were manifest in his six patients. The cases are illustrated.

Muscle Sign of Pressure on the Brain.—Ferry calls attention to a slight and transient rigidity of the muscles in passive flexing of the thigh and abduction of the arm as a sign of pressure on the brain. This recurring stiffness in the left arm and leg, twisting of the head to the left, and conjugate deviation of the eyes, also to the left, helped to localize the compression in the right parieto-occipital area in a case described.

Comptes Rendus de la Société de Biologie, Paris

91: 1359-1482 (Dec. 27) 1924. Partial Index

*Roentgen Ray and Gastric Secretion. Bensaude et al.—p. 1364.
Roentgenotherapy for Hydatid Cysts. Dévé and Delafontaine.—p. 1365.
*Action of Secretin on Glycemia. V. C. Troteano.—p. 1368.
*Wassermann and Hecht Tests. Gérard and Moissonnier.—p. 1371.
Immunization by Bacterial Filtrates in Cholera. L. Kepinow.—p. 1374.
*Effect of Ultraviolet Rays on Growth. Lesné et al.—p. 1378.
Specificity of Cholera Antivirus. M. Golovanoff.—p. 1379.
New Species of Fungus in Epidermomycosis. Massia and Grigoraki.—p. 1381.
*Tuberculous Antibodies in Primary Infection. Debré and Lelong.—p. 1383.
*Staining Cells in Rat Uterus. Moulonguet.—p. 1385.
*Sodium Nitrite in Arterial Hypertension. Petzetakis.—p. 1387.
*The Seasons and Nitrogen Metabolism. Maignon and Jung.—p. 1390.
*Action of Bromids on Heart. R. Delas.—p. 1393.
*Physiologic Rôle of the Spleen. Ducuing and Soula.—p. 1397.
*Reticulo-Endothelial Cells in Immunity. Katsunuma and Sumi.—p. 1401.
*Cerebrospinal Fluid in Tetanus. Sabrazès et al.—p. 1407.
*Blood Alkalinity in Tuberculous Guinea-Pig. Arloing et al.—p. 1411.
Anaphylaxis from Albuminoids in Guinea-Pig. Arloing and Langeron.—p. 1413.
*Elimination of Iodin by the Urine. Bonnamour and Delore.—p. 1415.
*Preservation of Animals for Dissection. H. Clément.—p. 1419.
*Epinephrin and Chloroform. B. Douglas.—p. 1419.
Formation of Muscular Fibers in Syphilitic Foci. Favre.—p. 1420.
Culture of Connective Tissue in Plasma. Korbler.—p. 1421.
*Action of Insulin on Glycogen in Frogs. Schwartz and Bricka.—p. 1428.
*Effect of Roentgen Ray on Dried Seeds. S. Ancel.—p. 1435.
*Chronic Typhoid Carrier. A. Haibe.—p. 1444.
Different Forms of Respiration. E. De Somer.—p. 1446.
*Action of Thyroid on p_H in Serum. Wodon-Rousseau.—p. 1450.
*Hetero-Agglutinins from Horse Serum. M. Hanganutziu.—p. 1457.
*Affinity for Ectoderm of Diphtheria Bacilli. Isaicu and Jurca.—p. 1459.
*Glycemia and Lactose Content in Milk. Nitzescu and Nicolau.—p. 1464.
*The Cerebrospinal Fluid. Papilian and Stanescu-Jippa.—p. 1465.
*Periarteritis Nodosa. Vasiliu and Iriminoiu.—p. 1466.
*Vaccine Treatment in Trachoma. P. Vancea.—p. 1468.

Roentgen Ray and Gastric Secretion.—In Bensaude, Solomon and Oury's experiments on man several applications of 2.5 H. units to the stomach region decreased in most cases the acidity and also the pepsin content of the gastric juice.

Effect of Secretin on Glycemia.—Troteano relates that the prolonged action of secretin, administered intravenously in dogs, induced a transient hypoglycemia. The phenomenon may be explained by the stimulating action on Langerhans' islands.

Comparative Value of Wassermann and Hecht Tests.—Out of 500 cases with a positive Wassermann reaction, in 498 instances the Hecht test was also positive, and even in a higher degree than the Wassermann reaction. The difference amounted sometimes to five drops of complement.

Influence of Ultraviolet Rays on Calcium in Growing Organism.—Exposure to the mercury quartz lamp augmented the weight in growing rats, while increasing, proportional to this, the total calcium content. Lesné, Turpin and Zizine assume that the ultraviolet rays may exert a favorable action, likewise, on the development of infants, and be helpful in prophylaxis of rickets and spasmophilia.

Tuberculous Antibodies in Primary Infection in Infants.—The Bordet-Gengou test proved in forty-eight infants with a positive tuberculin reaction, that tuberculosis acquired in the first months of life, does not arrest the disappearance of tuberculous antibodies transmitted from the mother. In tuberculosis acquired after disappearance of the transmitted antibodies, new antibodies appear later, rarely before the eighteenth month, and in small amounts.

Scarlet Red-Staining Cells in Uterus of Rat.—Moulonguet reports discovery in the rat uterus of cells with an exclusive affinity for scarlet red.

Sodium Nitrite in Hypertension.—Petzetakis obtained good results from intravenous injections of sodium nitrite in different chronic diseases with arterial hypertension. The first injection consisted of 0.005 gm. in a 1 per cent. solution, the second 0.01, the third 0.02 gm., or even 0.03, exceptionally 0.04. Three series of fifteen injections were sometimes given, the first daily, then with two or three day or longer intervals as the blood pressure dropped.

Connection Between Nitrogen Metabolism and the Seasons.—Maignon and Jung noted that the property to transform egg albumin into fat is considerably lowered in the white rat during the spring and fall, while it is enhanced in the summer and in winter. The reverse is noted in the susceptibility of the animal to nitrogen intoxication, which is more pronounced in the spring and in fall. The toxicity varies with the available fat liberated.

Action of Bromids on Heart.—Research on the isolated rabbit heart showed that sodium bromid and strontium bromid do not exert any depressant action on the myocardium.

Physiologic Rôle of the Spleen.—Observations on young dogs and rabbits, splenectomized or with the spleen region exposed to irradiations, proved a notable and constant diminution in the growth in weight of the animals. This was accompanied by a greater susceptibility to infections. The splenectomized animals presented an aspect of precocious senescence.

Reticulo-Endothelial Cells in Local Immunity.—Katsunuma and Sumi's experiments indicated that the reticulo-endothelial cells take the leading part in local immunity, while the leukocyte function is secondary.

Cerebrospinal Fluid in Tetanus.—Sabrazès, Sainte Marie and de Grailly are inclined to conclude that the amount of albumin and of urea in the cerebrospinal fluid does not change in tetanus, while the glucose content markedly increases. The hyperglycorrhachia may be connected with the high temperature in tetanus.

Alkalinity of Blood in Tuberculous Guinea-Pigs.—Arloing, Cluzet and Kofman found that the augmented alkalinity of the blood in tuberculous guinea-pigs seemed to depend more on the duration than on the intensity of the infection.

Elimination of Iodin in the Urine.—Bonnamour and Delore point out that a maximal saturation of the tissues with iodin, and the most durable action from it, occur with iodized oil administered intramuscularly.

Sodium Cacodylate for Preserving Animals.—Clément succeeded in preserving guinea-pigs and birds for purposes of dissection by intraperitoneal injection of sodium cacodylate.

Protective Action of Epinephrin.—Epinephrin injected before administration of chloroform prevented syncope, while injected during the anesthesia it killed the dog. Douglas affirms that this dual action may be demonstrated in the same dog, with a twenty-four hour interval between the two injections.

Action of Insulin on Glycogen in Frogs.—Schwartz and Bricka noted that insulin does not modify the glycogen content in frogs' livers, while the glycogen seemed to decrease or disappear from the liver of mammals under the effect of insulin.

Action of Roentgen Ray on Dry Seeds.—Application of roentgen rays, from one twelfth to 20 H. units, to dried beans and lentils did not hasten germination. Ancel verified this on 16,000 seeds.

Chronic Typhoid Carrier.—Haibe describes the case of a woman who had communicated typhoid to at least forty persons. Neither drug nor bacteriophage treatment, nor cholecystectomy cleared the stools from numbers of typhoid bacilli. Virulent bacilli are still present in the stools, seven years after the disease.

Action of Thyroid Feeding on the p_H of the Serum.—Wodon-Rousseau relates that thyroid extract or thyroid feeding reduced the p_H of rabbit serum. Conditions returned to normal after the thyroid feeding was suspended. The

lowering coincided with loss in weight and with definite histologic changes.

Agglutination of Erythrocytes by Horse Serum.—Nonspecific hetero-agglutinins were manifest in twelve subjects injected with horse serum by Hanganutziu. The agglutinins did not appear before the tenth or eleventh day after the injection, and persisted from forty-two to fifty-five days. Their appearance in the blood did not seem to depend on the quantity of the serum injected, the number of injections, or serum sickness. The agglutination deceptively simulated a positive Wassermann reaction, but this corrected itself before the hetero-agglutinins disappeared completely. In 100 serums from subjects not treated with horse serum, hetero-agglutinins were found only in four instances.

Affinity of Diphtheria Bacilli for Ectoderm.—The research of Isaicu and Jurca on rabbits confirmed the affinity of diphtheria bacilli for the ectoderm, proved by elaboration of specific antibodies.

Glycemia and Lactose Content of Milk.—Nitzescu and Nicolau state that the amount of lactose in the milk of sheep remains constant, even if the sugar content in the blood varies considerably under injections of sugars or insulin.

Circulation of Cerebrospinal Fluid.—Papilian and Stanescu-Jippa's conclusion is that the nerve sheaths are not involved in the circulation of the cerebrospinal fluid. The fluid passes through the pia into the nervous substance, along the perivascular sheaths of Robin, and thence into the capillaries of the nervous substance. The pacchionian bodies seem to take no part in the circulation of the cerebrospinal fluid.

Pathogenesis of Periarteritis Nodosa.—Vasiliu and Iriminoiu refer to Harris and Friedrich's success in inducing in rabbits with the filtered virus lesions similar to periarteritis in man. Their own research suggests that the morbid agent in periarteritis nodosa may be a streptococcus or a filtrable virus, or some other infectious germ.

Vaccine Treatment in Trachoma.—Vancea treated with a vaccine obtained from conjunctival tissue affected with this disease. Five or six subconjunctival injections were administered at three or four day intervals, in increasing doses, from 0.5 to 5 c.c., of an emulsion preserved on ice. A local inflammatory reaction appeared several hours after the first injection and persisted about forty-eight hours. After the third injection the granulation became hardly visible, and disappeared completely after the last injection. Out of five cases treated, there has been only one recurrence, two months afterward. The good results should be attributed mostly to Arthus' phenomenon, with possibly a local specific action from the vaccine.

Paris Médical

1-36 (Jan. 3) 1925

Tuberculosis in 1924. P. Lereboullet and M. Lelong.—p. 1.
Tubercle Bacilli in Sputum. L. Bernard.—p. 11.
Transmission of Tuberculous Antibodies from Mother to Fetus. R. Debré and M. Lelong.—p. 17.
Vaccination in Tuberculosis. B. Weill-Hallé and R. Turpin.—p. 20.
*Sedimentation of the Blood in Tuberculous Children. C. Gardère and Lainé.—p. 24.
Conjugal Tuberculosis. H. Tecon.—p. 29.

Sedimentation Speed of Blood in Tuberculous Children.—Gardère and Lainé's study was made on 5 c.c. of citrated blood after one hour, and again after twenty-four hours of sedimentation. The coincidence of a rapid early and a profuse total sedimentation was noted in grave pulmonary lesions. Slightly accelerated speed of early sedimentation with a high total sedimentation occurred in cases with a rather favorable prognosis, as in those improved after pneumothorax, or with a tendency to healing.

37-52 (Jan. 10) 1925

Wassermann Reaction in Congenital Syphilis. Lemaire and Lévy.—p. 37.
*Associated Protein and Vaccine Therapy. Ralli.—p. 42.
*Osteoperiostitis Consecutive to Typhoid. R. Melchior.—p. 47.

Combined Protein and Vaccine Therapy.—Ralli concludes from his trials of a combined treatment, by simultaneous injections of the two, that the effect is notably stronger than from each separately.

Osteoperiostitis Due to Typhoid Fever.—Melchior observed two cases of typhoid osteoperiostitis, with typhoid bacilli in the bone lesion in one. The affection disappears usually without any treatment except resting the part, as the organism is manufacturing its own antibodies.

Presse Médicale, Paris

33: 1-16 (Jan. 3) 1925

Present Status of Rickets. A. B. Marfan.—p. 1.
Infection in Gastric and Duodenal Ulcer. Duval et al.—p. 3.
Flushing the Colon by Way of the Mouth and Intestinal Tube in Ulcerative Colitis. M. Einhorn.—p. 4.
Circulatory Disturbances in Aneurysm. J. Sénèque.—p. 6.

33: 33-48 (Jan. 10) 1925

*Diagnosis of Spinal Tumor. Sicard and Laplane.—p. 33.
*Sodium Citrate in Therapeutics. L. Normet.—p. 37.
*Jaundice from Tuberculous Glands in Omentum. G. Jean.—p. 38.

Iodized Oil in Diagnosis of Tumors in Spinal Cord.—Sicard and Laplane refer to two patients with clinical features of tuberculous spondylitis in one case and tuberculous myelitis in the other. With subarachnoid injection of iodized oil, and successive laminectomy, an angiofibroma was found in both instances and safely removed.

Method for Administration of Sodium Citrate in Intravenous Injections.—Normet calls attention to the shock which may occur from sodium citrate, citing a recent case of sudden death following administration of the drug. He believes that a dose over 6 gm. may induce shock. A dose of 15 mg. per kilogram of body weight should not be surpassed in a single intravenous injection. One injection daily, with a rest from eight to fifteen days after four to six injections, is advisable. In anemia, he uses a mixture of sodium citrate (52 gm.), magnesium citrate (20 gm.), iron and potassium tartrate (3 gm.) and manganese citrate (1 gm.) with distilled water to 1,000 gm. From 15 to 20 c.c. of the solution for one injection is effective and harmless.

Chronic Jaundice from Tuberculous Glands in Lesser Omentum.—Jean adds to the six cited cases a personal case of tuberculous glands in the lesser omentum with chronic jaundice as the only symptom of the disease. He believes that removal of the diseased gland should be associated with cholecystectomy.

Schweizerische medizinische Wochenschrift, Basel

54: 1189-1208 (Dec. 25) 1924

*Hematology of Smallpox. G. Pantasis.—p. 1189.
Psychotherapy in Institutions. J. Marjasch.—p. 1196.
Hypernephroma of the Ovary. Lévy-Du Pan.—p. 1198.
"War and Medical Biography." Fetscher.—p. 1200. Reply. Roch.—p. 1201.

Hematology of Smallpox.—Pantasis studied the blood in eighty patients with the Swiss type of mild smallpox. In the prodromal stage a characteristic leukopenia, with progressively decreasing percentage of neutrophils and an increase in lymphocytes was observed. Many plasma cells were present. The absolute and relative neutropenia persisted in the eruptive period, while the lymphocytosis increased. He found the monocytes always decreased rather than increased. The eosinophils decreased except in the period of desquamation.

Pediatria, Naples

32: 1425-1447 (Dec. 15) 1924

Scarlet Fever in Rabbits. I. Nasso.—p. 1425.
*Parrot's Pseudoparalysis. F. Cannarsa.—p. 1432.
*Serodiagnosis of Tuberculosis. L. Bonacorsi.—p. 1443.

Parrot's Pseudoparalysis.—Cannarsa reviews sixty-five cases of the osteochondritis of the epiphysis causing a pseudoparalysis of one or more extremities in the first two months of life. The Wassermann test had been applied in twenty-four of them, with eighteen positive results.

Serodiagnosis of Tuberculosis.—Bonacorsi tested the serum of tuberculous children for flocculation reactions, using cholesterolized alcoholic extract from tubercle bacilli as antigen. The reaction was negative in all the controls but one, and was positive in all but two of the tuberculous children. It was positive in two patients with miliary tuberculosis.

Policlinico, Rome

31: 1683-1718 (Dec. 22) 1924

Interscapulothoracic Amputation for Sarcoma of Humerus. G. Cairo.—p. 1683.
*Treatment of Gonorrheal Complications. W. Pierangeli.—p. 1688.
Apparatus for Aspiration of Effusions and for Artificial Pneumothorax. P. M. Polleri.—p. 1689.

Treatment of Gonorrheal Complications.—Pierangeli had about equal results with subcutaneous and intravenous injections of gonococcus vaccine in men. The intravenous route was much superior in women with adnexitis. He injects subcutaneously twice, and follows with intravenous injections, increasing rapidly from 25 millions of germs. From six to fifteen injections were necessary.

31: 629-684 (Dec. 15) 1924. Surgical Section

Enterostomy in Ileus from Paralysis. O. Cignozzi.—p. 629.
*Gas Cysts on Intestines. R. Falcone.—p. 636.
Leukoplakia of Kidney Pelvis. V. Jura.—p. 655.
Experimental Kinking of the Appendix. G. Nicastro.—p. 660.
Hemorrhagic Necrosis of the Pancreas. G. Petta.—p. 674.

Intestinal Pneumatosis.—Falcone concludes from his study of a personal case and the records that the formation of gas cysts on the intestines belongs in the group of emphysematous affections like those of the vagina and bladder. The tendency to a spontaneous cure, and the benefit from a merely exploratory laparotomy confirm the assumption that the pneumatosis is an active inflammatory process.

Riforma Medica, Naples

40: 1105-1128 (Nov. 24) 1924

*Transactions of Italian Surgical Congress, 1924.—p. 1105. Idem. Urology.—p. 1117. Idem. Pediatrics.—p. 1122.

Periarterial Sympathectomy.—The first two sessions of the Italian surgical congress were devoted to this subject. Many described their experience with periarterial sympathectomy, Leriche his pioneer work in this line. He concluded with the statement that the operation deserves a trial but warned that great prudence is necessary in its tentative application. Uffreduzzi, in closing the whole discussion, agreed with Leriche that the sensory nerves probably have much to do with the phenomena that follow sympathectomy, and, further, that its efficacy—the same as Bier's stasis treatment—is not in the venous congestion but in the active hyperemia which follows it. In regard to varicose veins, he commented on the frequency of syphilis as a factor, and urged that sympathectomy should not be tried for a varicose ulcer until all that was possible had been realized with rest and spontaneous means. In arteriosclerosis, the operation can act only on the superposed spastic element. He recalled further Burci's study in 1893 of the results of removal of a segment of the adventitia, saying that none of the recent experiences has added anything to his description. Attempts to compare the action of different measures on different sides of the body are not conclusive, as Leriche has reported a case in which periarterial sympathectomy on one side cured not only the manifestations of Raynaud's disease on that side, but on the other side as well, and normal menstruation returned.

40: 1177-1200 (Dec. 15) 1924

Balanopreputial Leukoplakia. C. Maderna.—p. 1177.
Kodama's Seroprecipitation. A. D'Avanzo.—p. 1178.
*Autosterilization of the Skin. A. Scarpellini.—p. 1180.
Pneumococcus Vaccines and Antiserums. I. Jacono.—p. 1182.

Autosterilization of the Skin.—Scarpellini found that the number of germs on unwashed fingers increased in the first three days, and then remained almost constant. Handling of copper coins was followed by a reduction in the number of germs. Copper could be demonstrated on the hands even hours later.

40: 1201-1224 (Dec. 22) 1924

Closing Lecture. E. Maragliano.—p. 1201.
*Sugar Content of Cerebrospinal Fluid and of Blood. A. Puca.—p. 1211.
Pondorf's Scarification Tuberculin Vaccination. Battigelli.—p. 1213.

Glychorrhachia and Glycemia.—Puca found an increased sugar content of the cerebrospinal fluid (0.11-0.12 per cent.) in twelve patients with postencephalitic parkinsonism. This, together with the increase in proteins and lymphocytes, differentiates the condition from paralysis agitans. The glycorrhachia is independent of the glycemia.

Anales de la Facultad de Medicina, Lima

7: 9-141 (Dec.) 1924

*Tropical Medicine and Hygiene. P. Muehlens.—p. 9.
Test Thesis for Chair of Internal Pathology. C. Monge.—p. 27.
Idem. Bacteriology. R. Rebagliati.—p. 62.
Idem. Physiology. M. E. Tabusso.—p. 85.
Teaching of Biologic Physics. J. V. Bernales.—p. 111.
Astigmatism and Endoscopy. J. V. Bernales.—p. 120.

Recent Progress in Tropical Medicine and Hygiene.—Muehlens remarks that in his experience as consulting hygienist in the Bulgarian army during the World War, there was no quinin to be had in 1918, and the troops and the whole populace joined in measures to combat mosquitoes. The consequence was that there was less malaria than in the preceding year when quinin had been available. He adds that a good mosquito net is the best personal protection against malaria, as he has found in his twenty years' of study of tropical diseases without ever contracting malaria. His experience also with therapeutic malaria has confirmed his epidemiologic observation to the effect that a quinin-resistant strain of malaria parasites has never been demonstrated to date. The refractory behavior of malaria in certain regions, as in famine-stricken Russia, is explained by the weakness of the organism from privations and the opportunities for superinfection of mosquitoes and people. He relates that no less than four members of the staff of the Hamburg Institute for Tropical Diseases have contracted typhus from their laboratory work, and one, Professor Prowazek, succumbed. He also, in recent Red Cross work in Russia, lost from typhus his collaborator, Wolf Gaertner. In his recent trip through northern Argentina he found an average of 33 per cent. infected with malaria of 7,000 persons examined; in some schools up to 73 per cent. of the children. The success of emetin, tartar emetic and other drugs in treatment of certain tropical diseases has recently been duplicated with bismuth in yaws and the improvement realized in treatment of leprosy.

Archivos Latino-Amer. de Pediatría, Buenos Aires

18: 401-465, 1924

Notes on Malaria. J. C. Navarro and E. A. Beretervide.—p. 401.
Official Child Welfare Work in S. Paulo. C. Ferreira.—p. 408. Conc'n.
*Cerebrospinal Meningitis. L. Morquio.—p. 420.
*Acute Meningitis in Breast-Fed Infant. C. Pelfort.—p. 429.
Colitis Due to Lamblia Intestinalis. L. Lezama.—p. 435.

Cerebrospinal Meningitis.—Morquio reports a mortality of 16 per cent. in his fifty cases of cerebrospinal meningitis in children in the last fifteen years. The outcome has been better since he has made a practice of five or six daily intraspinal injections of the antiserum, and then suspending it. If the fever keeps up, he resumes it, watching at this stage for symptoms of anaphylaxis, the antiserum being liable to induce congestion and edema and aggravate conditions. It seems to prevent the formation of local immunity, and by suspending the antiserum—even when pus and meningococci are still present in the cerebrospinal fluid—the patient is given a chance to produce his own antibodies, and eventually recovers. This natural tendency to recovery must be borne in mind in serotherapy. If the meningitis persists, repeated hot baths and an autogenous vaccine may prove useful. Treatment along these lines seems to ward off sequelae, and over 80 per cent. recover.

Meningitis in an Infant.—Pelfort's case teaches the importance of giving full doses of the antiserum from the first, not being misled by the infant's apparently feeling well. The exacerbation of all the symptoms the seventh day was treated by intensive serotherapy, which seemed to bring on a serous meningitis. Vaccine therapy then gave no relief, and the child died in coma.

Brazil-Medico, Rio de Janeiro

2: 269-282 (Nov. 8) 1924

*Dupuytren's Contraction. Flaviano Silva.—p. 269.
Desiccated Serum from Guinea-Pigs for Complement. Moses.—p. 272.
Systolic Murmur at the Base in Aortic Insufficiency. J. L. de Mesquita.—p. 273.

Dupuytren's Contraction.—Silva has witnessed material improvement follow treatment for syphilis in a severe case

of Dupuytren's contraction involving symmetrically both hands and feet, with painful spasms in the feet. The thumb was attacked first in this case, the patient, a man, aged 48.

2: 307-318 (Nov. 29) 1924

Welfare Work for Children in Ukrainia. F. Haustein.—p. 307.
*Abdominocardiac Reflexes from Surgical Standpoint. A. Valerio.—p. 310.
Ophthalmia in Premature Newly Born. E. Campos.—p. 313.

The Abdomen-Heart Reflexes.—Valerio relates that his systematic study of patients before operations has revealed that the Livierato sign (vasoconstriction when the abdominal sympathetic is irritated by striking the anterior abdomen along the xipho-umbilical line) was always positive in patients with, even incipient, disease of the myocardium. It thus warns against the Trendelenburg position and other procedures making much demand on the organism. The Prevel sign is the acceleration of the heart beat when the reclining subject changes to the erect position. This abdominocardiac reflex is the reverse of the oculocardiac reflex, in which the heart action is retarded by the test.

Revista Médica del Rosario

14: 343-393, 1924

Dilatation of Bronchi in Children. C. Muniagurria.—p. 343.
*Hypertension from Carbohydrate Retention. E. S. Weiler.—p. 357.
Ulceration from Injection of Epinephrin in Saline. Mestre.—p. 364.
*Sign of Pleural Effusion with Pneumothorax. Weiler.—p. 367.

Hypertension from Retention of Carbohydrates.—Weiler describes two additional cases which sustain his theory that permanent arterial hypertension is sometimes due to retention of carbohydrates, and the specific treatment for it is restriction of intake of carbohydrates. These cases can be detected by watching the influence on the blood sugar of restriction of carbohydrates. This may reduce the blood pressure even in cases of "chronic hypertensive nephritis," and it always reduces it in the cases in which retention of carbohydrates is the main element. His two patients were women of 48 and 57.

Sign Warning of Pleural Effusion with Artificial Pneumothorax.—Weiler calls attention to the significance of the discovery that, at the succeeding filling, a much smaller amount of the gas induces a much higher differential manometric pressure than the last time. For example, in a case described, 1,100 c.c. was required to bring the pressure up to 13 cm. at the nineteenth filling. At the twentieth filling, only 350 c.c. brought the pressure up to 17.5 cm. This was accepted as a warning signal, confirmed by other signs of a pleural effusion in a few days.

Archiv für Gynäkologie, Berlin

123: 1-336 (Dec. 15) 1924

Coincidence of Uterus Tumors. II. O. Frankl.—p. 1.
Myosarcomas of the Uterus. K. Imhäuser.—p. 12.
*Thyroid Function During Pregnancy. H. Knaus.—p. 26.
*Causes of Eclampsia. H. Hoffmann.—p. 37.
Relation Between Structure and Function of the Mamma. A. Seitz.—p. 46.
Biology of the New-Born. I. K. Hellmuth.—p. 57.
Plastic Surgery on the Pelvic Floor. H. Sellheim.—p. 88.
Adenomyomas in Female Genitalia. C. Artusi.—p. 114.
Action of Ovaries on Nitrogen Metabolism. I. Orita.—p. 133.
*Effect of Uterus Displacement and of Adnexitis on Menstruation. W. Vogel.—p. 168.
Case of Dermoid Cyst in Wall of Fallopian Tube. K. Ulesko-Stroganowa.—p. 175.
Ovarian Epithelioma from Chronic Inflammation. H. Rösch.—p. 180.
Adenofibrosis in Laparotomy Scars. W. Vassmer.—p. 187.
Case of Polypous Sarcoma of the Uterus. A. Kuncz and P. Zacher.—p. 211.
Ectopic Decidua Without Pregnancy. W. Schiller.—p. 219.
*Placenta Praevia. Mikulicz-Radecki.—p. 245.
*Spirochete Infection in Puerperium. E. Philipp.—p. 268.
"Testing Virulence of Streptococci." Hanow.—p. 279.
*Tests for Syphilis in Maternities. E. Klaften.—p. 283.
Trophoneurotic Disturbances After Intraspinal Anesthesia. P. Klein.—p. 300.
Genital Suppuration Invading Bladder. A. Matusovszky.—p. 314.
Procedure in Intraspinal Anesthesia. K. Vorlaender.—p. 323.

Thyroid Function During Pregnancy.—Knaus made an intravenous injection of 0.02 mg. of epinephrin in thirty-five multiparas and primiparas in the latter half of pregnancy, immediately followed by subcutaneous injection of 0.8 to 1 mg. of epinephrin. The responses and the data previously accumulated by himself and others testify that thyroid functioning is depressed instead of exaggerated during pregnancy. One practical conclusion is that thyroid treatment is indicated to combat pregnancy edema, etc. Histologic examination of four patients who died intra partum confirmed the hypothyroidism.

The Cause of Eclampsia.—Hoffmann offers proof in support of his view that eclampsia is due to disturbance of phosphorus and calcium metabolism. The calcium deficiency is shown in slight degree in pregnancy kidney; in eclampsia, in high degree. The lack of calcium entails sodium excess from the upset in the ion balance. He suggests a normal inhibiting influence of calcium on the sympathetic nerve; in calcium deficiency, increased irritability of the nerve exaggerates the production of epinephrin, which in turn reacts on the nerve, thus establishing a vicious circle, resulting in extreme stimulation of the kidneys. In prophylaxis, timely recognition of the preeclamptic symptoms is most important. In treatment, speedy delivery relieves the endocrine system. In replenishing the supply of calcium, phosphorus has to be given with it.

Effect of Uterus Displacement and Adnexitis on Menstruation.—Vogel found the menses normal in 43 per cent. of 2,000 gynecologic cases. Retroflexion rarely affected the menses. Prolapse of the uterus and adnexitis more often increased the menstrual flow, probably from venous stasis and a constitutional inferiority of the tissues, or the local inflammatory hyperemia from the adnexitis. In cases of extreme anteflexion, a marked menorrhagic tendency was apparent.

Prognosis and Treatment of Placenta Praevia.—Von Mikulicz-Radecki found placenta praevia in 1.74 per cent. of 9,608 parturients; 16 per cent. were in primiparas. In about 50 per cent. the first hemorrhage took place less than ten days before term. In the 31 cases with delivery by cesarean section, the mortality of the women was 3.3 per cent.; in the others, 11.5 per cent. The fetal mortality was 70.1 per cent. in the latter group. With cesarean section, 83.4 per cent. of all viable infants were saved.

Spirochete Infection in the Puerperium.—Philipp found spirochetes in the vagina in about 5 per cent. of 300 pregnant women. He reports three cases of a local infection of the genital organs, all with explosive appearance of spirochetes in enormous quantities after delivery. The spirochetes were never demonstrated in the blood or spinal fluid, and the Wassermann reaction was negative in each. Under certain conditions, the harmless saprophytes in the vagina apparently become virulent, and infection from the genitalia may explain many cases of jaundice in the puerperium, which, regarded as puerperal fever, in reality belong to the group including Weil's disease.

Tests for Syphilis in Maternities.—Klaften applied serologic tests with retroplacental blood in 2,486 cases. In view of its lesser tendency to nonspecific positive reactions, the Meinicke turbidity test seems the best method to date for examination of retroplacental blood. Reexaminations later of all cases with a positive reaction in labor or puerperium substantiated the reliability of the test in childbirth. Positive reactions in the puerperium should be followed by at least two reexaminations, in each case supplemented with the Wassermann test. At every stage of pregnancy the venous blood should be examined by both the Wassermann and the Meinicke tests.

Archiv für Kinderheilkunde, Stuttgart

75: 81-160 (Dec. 24) 1924

Typhoid in Children. H. Bischoff.—p. 81.
*Early Diagnosis of Whooping Cough. E. Best.—p. 93.
*Age Predisposition in Rickets. A. Eckstein.—p. 98.
Tuberculosis of Bronchial Glands. F. Redeker.—p. 106.
Superposed Acute Infectious Diseases. S. Meyer.—p. 122.
Morphin Poisoning in Child with Whooping Cough. W. Frank.—p. 129.
Modern Psychology as Applied to Children. R. Kochmann.—p. 134.

Early Diagnosis of Whooping Cough.—While it may be made by the cultivation of whooping cough bacilli in a glycerin-potato-agar medium, Best found the procedure unreliable with negative findings. Macroscopic examination of the colonies does not suffice.

Experimental Study of Age Predisposition in Rickets.—Thallium rickets in rats closely resembles human avitamin rickets. Eckstein maintains that the disturbances of metabolism in human rickets and experimental rickets in rats occur at a critical moment in the growth of the skeleton, determined by the age predisposition. The nature of the metabolic disturbance seems to be immaterial. A corroborating indication of the importance of the age at the moment as determining the reaction to a given organic injury, is seen in the changes in the fur in thallium rickets in rats. These changes are typical for the different ages, and are not produced in the older animals. The age predisposition depends on the constitutional factor, and individual variations in the rapidity of development.

Archiv für klinische Chirurgie, Berlin

132: 487-806 (Dec. 30) 1924

Access to Shoulder and Hip Joint. E. Payr.—p. 487.
*Access to Rectal Cancer. V. Schmieden and A. W. Fischer.—p. 503.
*Outcome of Operations on the Heart. J. J. Dshanelidze.—p. 528.
Biologic Origin of Cancer. L. Moszkowicz.—p. 558.
*Periarterial Sympathectomy. H. F. O. Haberland.—p. 621.
Lung Nerves from Surgical Standpoint. A. Taft.—p. 626.
Technic for Gastrectomy. R. Hinz.—p. 635.
*Blocking the Erysipeloid Focus. E. Huber.—p. 646.
*Hernia Operations. K. Mermingas.—p. 655.
*Temporary Clamping of Kidney Pedicle. A. Hübner.—p. 665.
*Calcium Chlorid Treatment of Tuberculosis. A. Oschmann.—p. 681.
Joint Function in Relation to Arthritis Deformans. Burckhardt.—p. 706.
*The Continuous Bath. B. Pfab.—p. 764.
Suture of Gastric Ulcer. F. Erkes.—p. 793.
Interparietal Inguinal Hernia. F. Puhlmann.—p. 802.

Abdominal-Sacral Access to Rectal Cancer.—Schmieden and Fischer assert that this technic renders a high site as accessible as the low. The laparotomy, as the first step, may reveal unsuspected metastases.

Ultimate Outcome After Operations on the Heart.—Dshanelidze has collected 535 cases, 1896-1921. The operation had been done for a stab wound in 402, and for a projectile injury in the others. The immediate mortality was 56 per cent. In 96.5 per cent. of 113 cases traced for two months up to eighteen years, the heart functioning did not seem to be impaired. Even prolonged complicating infection did not prevent satisfactory recuperation of function. The location of the wound and operative technic seemed immaterial. The sutured heart has passed through infectious diseases, abuse of alcohol and tobacco, long operations and the strain of childbearing. The unfavorable outcome in 3.5 per cent. was due to aneurysm, adhesions or weakening of the scar.

The Vessel Wall After Periarterial Sympathectomy.—Haberland states that by cautious mobilization of the slit adventitia, a segment of it can be peeled off without molesting the media, and there is no constriction of the exposed vessel. It dilates; but it contracts if the media is molested.

Blocking Erysipeloid Processes.—Huber injects 1 per cent. procain to form a ring barrier to wall in the infectious focus. This not only blocked the extension of the infection and hastened healing in his cases but put an end to the itching and pain in the focus. Glucose and saline are effectual also, but they are more painful.

Herniotomy from Above.—Mermingas lauds the advantages of correcting inguinal hernia through an incision above, as for appendectomy. He describes with illustrations his method, which he has applied in 119 cases. In twenty-three of the men and twenty-four of the women he reenforced the internal inguinal ring, merely as a prophylactic measure, during an operation on the appendix.

Clamping the Pedicle of the Kidney.—Hübner concludes from his research on cats and dogs that the pedicle of the kidney will recuperate perfectly after the application of a clamp for a period not exceeding thirty minutes.

Calcium Treatment of Surgical Tuberculosis.—Oschmann marshals the known facts which seem to indicate an accumulation of acids in the tuberculous organism. Possibly the tubercle bacillus itself contributes some of the acid; it certainly finds the acid environment conducive. But the acids entail loss of calcium, and he combats this with calcium chlorid. He gives it preferably by iontophoresis at the focus. His experience with thirty-two cases confirmed his theoretical assumptions, and convinced him that this is a simple and effectual means of treating tuberculous bone, joint and skin lesions. In lupus the results were brilliant, and he thinks this treatment has a future for tuberculous lesions in the bladder and elsewhere. He warns against copper electrodes, as copper may be driven into the tissues. He prefers a carbon electrode. It smells strongly of chlorin after use.

The Continuous Bath from the Surgical Standpoint.—Pfab reiterates that bedsores, phlegmons, and tedious suppurating processes in soft parts and joints usually show marked relief and benefit from the continuous bath, and healing is speeded up to a remarkable extent. The oligodynamic action of the medium on the bacteria, the continuous leukocytosis and the altered and augmented currents of body juices aid in the beneficial effect.

Deutsche medizinische Wochenschrift, Berlin

50: 1825-1840 (Dec. 26) 1924

*Vaccination Against Tuberculosis. H. Selter.—p. 1825.
*Malaria Treatment of General Paralysis. Plehn.—p. 1827.
Psychanalysis and Psychiatry. Birnbaum.—p. 1828. Cont'n.
Tuberculin and the Vegetative System. J. Schubert.—p. 1830.
*Grouping of Diphtheria Bacilli. J. Hammerschmidt.—p. 1831.
Micro-Analysis. F. Wrede.—p. 1831.
*Treatment of Varicose Veins. F. G. Meyer.—p. 1832.
*Tetanus After Rooster's Bite. O. Connerth.—p. 1833.
Infection Statistics in Germany.—p. 1834.

Vaccination Against Tuberculosis.—Selter believes that preventive vaccination against tuberculosis is impossible with killed or avirulent germs. He sees the only chance in the inoculation of minute amounts of virulent bacilli.

Malaria Treatment of General Paralysis.—Plehn recommends estivo-autumnal infection in general paralysis when a previous tertian infection had to be interrupted too early. A reinfection with the estivo-autumnal parasite then succeeds, while a second inoculation with the tertian produces only slight fever. Continuous expert control of the blood is important. He prefers regular blood smears to the "thick droplet" method, and interrupts the treatment if more than 10 per cent. of the erythrocytes are affected. He has lost several patients, and believes that the assumed harmlessness of the tertian infection is found only by those who do not count the complications occurring after the disappearance of fever. Bedsores, sepsis, exhaustion, enteritis, pneumonia and parotitis, which appear within two weeks after the alleged recovery, are still complications of the malaria. In spite of this, the treatment is so valuable that it is worth the risk, which might be lessened. He finds, contrary to Wagner-Jauregg, that gametes are present in the inoculation malaria of both types.

Grouping of Diphtheria Bacilli.—Hammerschmidt distinguishes five groups of diphtheria bacilli according to their hemolytic action, growth, production of acid, and agglutination.

Injection Treatment of Varicose Veins.—Meyer concludes that Linser's treatment of varices by injection of mercuric chlorid gives good results. Linser has recently recommended to inject 5-10 c.c. of a 15-20 per cent. sodium chlorid solution instead. This avoids the danger of mercury poisoning, and the effect is as certain.

Tetanus After Rooster's Bite.—Connerth observed a case of tetanus in a child who had been bitten by a rooster. The wound in the eyelid had been sutured, but no preventive antitoxin given. The incubation was ten days.

Deutsche Zeitschrift für Chirurgie, Leipzig

189: 1-252 (Dec.) 1924

Treatment of Gastric Ulcer. H. J. Laméris.—p. 1.
Case of Empyema of Ureter Stump. Enderlen.—p. 19.
Congenital Dislocation of Patella. Voelcker.—p. 24.
Behavior of Pure Cellulose Suture Material in the Body Tissues. H. Dürck.—p. 31.
Practical Value of Cellulose Suture Material. O. Roith.—p. 46.
Intestine in New-Born Infant Blocked by Mucus-Epithelium Plug. J. Exalto.—p. 52.
Jaundice in Inflammation of Biliary Ducts. F. Rost.—p. 66.
Reconstruction of Common Bile Duct. O. Roith.—p. 73.
*Experimental Sympathectomy. P. R. Michaël.—p. 76.

Torsion of Sigmoid Flexure in Adults. C. Franke.—p. 89.
Gangrene from Arteriosclerosis and Thrombo-Arteritis. L. Eloesser.—p. 95.
Cysts and Brown Tumors of the Bones. E. Looser.—p. 113.
*Surgical Treatment of Acute Pancreatitis. L. Arnsperger.—p. 189.
High Transverse Abdominal Incision in Resection of Stomach. F. Colmers.—p. 211.
Artificial Blocking of Branches of Pulmonary Arteries. F. Krampf.—p. 216.
Chronic Empyema with Fistula into Lung. F. Klinge.—p. 241.

Experimental Sympathectomy.—For purposes of comparison, Michaël made similar cuts on both ears, through a steneil, in each of his eleven rabbits. Removal of the superior cervical sympathetic ganglion on one side did not promote or retard the healing of the wound on the operated side, but inflammation induced by turpentine resulted in more pronounced manifestations than normally. When, further, the sympathetic nerve was divided, the difference in reaction between the two ears was less or imperceptible.

Acute Pancreatitis.—Arnsperger records 20 cases; 18 were operative (11 of acute pancreatitis, and 4 of fat necrosis in the abdominal cavity without a trace of pancreatitis), with a mortality of 33⅓ per cent. In the 10 cases since his introduction of removal and careful drainage of the exudates in the pancreas region, and especially behind the pancreas, the mortality has been 20 per cent.; omitting the 3 cases of subacute pancreatitis, 28 per cent. Diagnosis of probable acute pancreatitis before operation was made in only 3 cases. The clinical impression at first is that it is a case of poisoning. In one patient, paratyphoid B bacilli were found in the exudate the thirteenth hour. In all he noted particularly the extreme weakness, distention, particularly in the epigastrium, cyanosis of the face, and dry, coated tongue, with relatively slight tenderness of the abdomen, and rigidity usually absent. The prognosis, always grave, is most unfavorable in the intermediate stage of intoxication and peritonitis, yet 3 of these cases were saved. Early surgical treatment with the proper technic now allows a hopeful outlook in acute pancreatitis. In the after-treatment, he emphasizes the importance of a carefully chosen diet.

Klinische Wochenschrift, Berlin

3: 2369-2416 (Dec. 23) 1924

Pharmacology of the Liver. H. Mautner.—p. 2369. Conc'n.
*Metabolism After Milk Injections. J. Abelin and K. Miyazaki.—p. 2373.
*Experimental Treatment of Peripheral Paralysis. F. Kraus.—p. 2377.
*Surgical Treatment of Diabetes. G. Mansfeld.—p. 2378.
*Etiology of Blindness. H. Frese.—p. 2380.
*Snapping Finger in Polyarthritis. J. Helweg.—p. 2383.
*Calcium and the Acid-Alkali Balance. H. Hummel.—p. 2384.
*Bilirubinemia. Z. Ernst and J. Förster.—p. 2386.
*Aromatic Amins in Cancer. L. Barthel.—p. 2388.
"Blood Transfusion." Plehn.—p. 2388.
"Lipemia." E. Joël.—p. 2389.
*Leukopenia and Liver Veins. H. Vollmer.—p. 2389.
*Diabetes. F. M. Bricker.—p. 2389.
Tuberculosis of Bronchial Gland. Minnigerode and Gottstein.—p. 2390.
Affections of Vegetative Nervous System. O. Platz.—p. 2391.
Morphin and Cocain Addiction. K. John.—p. 2395.
Biology of Radiations. H. R. Schinz.—p. 2397. Conc'n.

Metabolism After Milk Injections.—Abelin and Miyazaki found that injections of milk do not change the basal metabolism in rats. Yet the specific dynamic action of meat was markedly increased.

Experimental Treatment of Peripheral Paralysis.—Kraus cut the sciatic nerve in rabbits and sutured the ends together. He observed in those animals which were treated with roentgen rays (in some of them combined with diathermy) a return of the Magnus toe-spreading reflex in ten to twenty weeks. A marked difference in the size of the muscles was apparent in the sixth to the eighth week when compared with the untreated controls. A superficial dry gangrene developed in the majority of the controls, but only in a few of the treated animals. He had similar success in patients with postneuritic paralysis.

Surgical Treatment of Diabetes.—Mansfeld ligated in two dogs a part of the pancreas, preserving the blood supply. The ligated portion atrophied, but it seemed that the acini changed into Langerhans' islands. The blood sugar of the dogs fasting for two days decreased notably after the operation. Their sugar tolerance was also much increased.

Etiology of Blindness.—Frese publishes statistics on the etiology of blindness in 849 young persons. Gonorrhea was the cause in 23 per cent.; injuries in 8.2 per cent. A further 4.6 per cent. might be avoided by better prevention and treatment of diphtheria, smallpox, syphilis and brain affections, making a total of 35.8 per cent. of avoidable causes.

Snapping Finger in Polyarthritis.—Helweg noted a snapping finger quite frequently in polyarthritis patients. Massage of the affected part of the tendon and its sheath was useful.

Calcium and the Acid-Alkali Balance.—Hummel points out that rickets and spasmophilia, although belonging clinically to the same group, have an opposite tendency in metabolism—acidotic in rickets, alkalotic in spasmophilia. He sees the common moment in the changes connected with the calcification of bones. Calcium carbonate can be deposited from the bicarbonate only in an alkaline reaction. This reaction of the medium disappears when the calcium carbonate has precipitated. Since the process is reversible, high degrees of alkalinity occur if the precipitation of calcium carbonate is prevented. Calcified bones give an alkaline reaction, while the osteoid tissue is acid as long as it is unable to take up lime. The gravest cases of rickets are not spasmophilic, because there are so many acid proteins of the osteoid tissue that the hydroxyl ions are easily saturated. A spasmophilic condition with its alkalosis is already a step toward the cure of the rickets.

Colorimetric Test for Bilirubin in the Blood.—Ernst and Förster precipitate the serum with twice the volume of acetone, and compare the color of the filtrate with a potassium bichromate standard.

Aromatic Amins in Cancer.—Barthel found no aromatic amins, phenols or amidophenols in cancer tissue.

Leukopenia and Liver Veins.—Vollmer, Schmitz and Serebrijski attribute the leukopenia after intracutaneous injections to a functional occlusion of hepatic veins. It occurs only in animals which have this mechanism, and it may be suppressed by caffein and theobromin, which open the occlusion.

Diabetes.—Bricker produced hyperglycemia in rabbits by intravenous injections of lactic acid, and hypoglycemia by sodium bicarbonate. Surviving pieces of kidney or muscle lost sugar in an acid solution, and absorbed sugar in an alkaline. Ingestion of sodium bicarbonate produced also a hypoglycemia in a pancreatectomized dog.

4: 1-48 (Jan. 1) 1925

Tonus of Muscles. O. Riesser.—p. 1.
*Two-Phase Action of Hormones. H. Zondek and H. Ucko.—p. 6.
*Blood Metabolism. P. Morawitz and G. Kühl.—p. 7.
*Oxytocic Titer of the Pituitary. P. Trendelenburg.—p. 9.
*Irritation of Normal and Eczema Skin. O. Schürch.—p. 11.
*Rinsing the Blood by Dialysis in Vivo. G. Haas.—p. 13.
Myelography. J. Berberich and S. Hirsch.—p. 14.
The Development Question in Psychopathology. A. Storch.—p. 16.
*Osteomyelitis from Injury. A. Schmidt.—p. 20.
"Treatment of Pericarditis." H. Curschmann.—p. 21.
*Potassium and Magnesium in Metabolism. C. Oehme.—p. 21.
Rôle of Antagonists in Muscle Contraction. Fleischhacker and Guttmann.—p. 22.
Male Cretin Pseudohermaphrodite. L. Fraenkel.—p. 22.
Atropin and Pilocarpin Medication. K. Holm.—p. 24.
Future of Social Insurance. P. Kaufmann.—p. 27.
Artistic Production from Psychiatric Standpoint. Kronfeld.—p. 29.
Arteriosclerosis. W. Roth.—p. 30.
*Diagnosis of Diaphragmatic Pleurisy. E. Mester.—p. 45.

Two-Phase Action of Hormones.—Zondek and Ucko find that the action of every hormone consists of two opposite phases. The slight hyperglycemia which follows after the typical insulin hypoglycemia is not a secondary reaction of the organism, but the second phase of the action of the insulin itself. In a similar way, diuresis and its inhibition by pituitary extracts may be due to the action of the same hormone. Injections of small amounts of insulin combined with definite doses of calcium or magnesium salts caused a prevalence of the hyperglycemia phase. Too large doses of the hormone seemed to paralyze the cells so that the added salts then had no effect.

Blood Metabolism.—Morawitz and Kühl determined on students and dogs the number, hemoglobin content and

oxygen consumption of erythrocytes and the urobilin excretion as an index of the metabolism of hemoglobin. Iron and arsenic had no effect. Meat in large amounts accelerated both the formation and destruction of hemoglobin.

Oxytocic Substance of the Pituitary.—Trendelenburg compared in 1920 with Borgmann ten samples of commercial pituitary preparations with fresh extracts of the gland. The average strength of the samples was less than 2 per cent. of the alleged titer. He continued the titration with nineteen new samples. Some of them had no action at all, and all were far below the titer given by the manufacturer, although most of them are supposed to be under "constant physiologic control." Different samples from the same source varied considerably. One of the preparations contained chiefly epinephrin.

Irritation of Normal and Eczematous Skin.—Schürch applied for twenty-four hours solutions of various physiologic substances (sodium urate, glycocoll, acetone, beta-oxybutyric acid, neutralized biliary acids, pyrocatechin, etc.) on the skin of 306 healthy subjects and seventy-one with a tendency to eczema. Only twenty-one responded with a slight and only one with a strong reaction. The latter was a man with eczema who reacted to beta-oxybutyric acid.

Rinsing the Blood by Dialysis in Vivo.—Haas resumed his experiments on dogs after obtaining an atoxic herudin. The results encouraged him to make a short trial of this dialysis procedure in a man with uremia.

Osteomyelitis Following Injury.—Schmidt found traumatism, suppuration or infectious disease as etiology in 15 per cent. of the 989 cases of osteomyelitis treated at the Garré clinic. If the injury has not left any traces, a causal connection may be admitted only when the osteomyelitis sets in within two days. With a suffusion, slight symptoms must have been observed in the first week if the bone affection becomes evident later. If the skin was injured, a causal connection may be admitted even after three weeks. While suppuration may cause a distant osteomyelitis, an affection of the nearest bone is to be required in aseptic cases for admitting a causal connection.

Potassium and Magnesium in Metabolism.—Oehme found among other details that the diuretic action of potassium is inhibited by addition of a certain amount of magnesium.

Diagnosis of Diaphragmatic Pleurisy.—Mester observed respiratory movements of the alae of the nose when a subphrenic abscess had caused a diaphragmatic pleuritis. The symptom is distinct only in beginning cases.

Medizinische Klinik, Berlin

20: 1827-1844 (Dec. 28) 1924

*Fracture of Neck of Femur. G. Axhausen.—p. 1827.
The Gallbladder in Health and Disease. B. Halpert.—p. 1830.
Symposium on Gallstones. H. Finsterer.—p. 1832. Cont'n.
*Elasticity of the Vas Deferens. K. Fecher.—p. 1837.
Obstetric Breviary. F. Eberhart.—p. 1839. Cont'n.
Present Status of Cancer and Its Treatment. O. Strauss.—p. 1840. Conc'n.

Fracture of Neck of Femur.—Axhausen refuses to share the pessimism on the chances of patients with fracture of the neck of the femur. Necrosis of the proximal fragment is the rule, but it does not make healing impossible. The condition resembles a free bone transplant. Exact reposition (with overcorrection) and absolute immobilization, as advised by Whitman, for two to four months, and no attempt to use the limb for walking for six to twelve months are essential.

Elasticity of the Vas Deferens.—Fecher's measurements show that the cause of the retraction of the testis after operative correction of cryptorchism is in the elasticity of the vas deferens. It should be gradually stretched before the operation. The blood vessels of the spermatic cord are much less elastic, and are therefore not so liable to retract.

Münchener medizinische Wochenschrift, Munich

71: 1815-1830 (Dec. 26) 1924

*Contagiousness of Poliomyelitis. R. v. Hoesslin.—p. 1815.
*Treatment of Goiter in Infant. F. Hamburger.—p. 1815.
Oncotic Pressure in Plasma. H. Runge and Kessler. —p. 1816.
*Determination of Sex of Fetus. E. Gurewitsch.—p. 1817.
*Hypertension and Arteriosclerosis. Wahle.—p. 1820.
Recovery After Typhoid Perforation Peritonitis. J. Racic.—p. 1820.
Necrosis of Jaw After Tooth Extraction. Nägelsbach.—p. 1820.
Hemometer. E. Hellige.—p. 1821.
*Cisterna Puncture. A. Fried.—p. 1821.
"The Gas Question in Pneumothorax." E. Lindemann.—p. 1821.
Gout. F. Umber.—p. 1822.

Contagiousness of Sporadic Infantile Paralysis.—The infection of Hoesslin's patient could be traced to a girl convalescent after poliomyelitis. She proved to be the carrier of contagion at least nine or ten weeks after the onset of her poliomyelitis.

Treatment of Goiter in Infant.—Hamburger reports on two cases which demonstrate the efficacy and the dangers of iodin treatment of goiter in infants. One of them was 4 days old, and could hardly breathe on account of his goiter. The treatment consisted in 1 mg. doses of sodium iodid given daily for eight days. The goiter was distinctly smaller on the fourth day, and had disappeared by the eighth day. At the same time, mucous diarrhea set in, the baby lost in weight, and died on the eleventh day. This shows that the medication should be discontinued as soon as the goiter begins to decrease in size. Another infant, 8 months old, recovered within one week after having received only 0.3 mg. of potassium iodid and 0.015 gm. of thyroid extract.

Determination of Sex of Fetus.—Gurewitsch applied Manoiloff's test to the blood clot from sixty pregnant women. He made a correct diagnosis from the reaction as to the sex of the fetus in 88 per cent. of the women.

Cough Symptom of Hypertension.—Wahle measured the blood pressure after coughing in plethoric patients with hypertension. The blood pressure decreased by 20-30 mm. These patients are ameliorated by all physical and dietetic procedures tending to reduce the pressure.

Cisterna Puncture.—Fried screws a small metal cylinder on the needle for suboccipital puncture; this lessens the possibility of puncturing the cisterna deeper than intended.

Wiener klinische Wochenschrift, Vienna

37: 1323-1338 (Dec. 25) 1924

*Antispasmodic Action of Paravertebral Injection. J. Pal.—p. 1323.
*Reinfection with Measles. Starck.—p. 1325.
Focal Reaction on Heart Valves. G. Spengler.—p. 1325.
*Preservation of Malaria Blood. R. Weeber.—p. 1326.
*Cause and Treatment of Pruritus. L. Haas.—p. 1328.
Sedimentation Test. A. Zimmermann.—p. 1330.

Antispasmodic Action of Paravertebral Injection.—Pal reviews the therapeutic value of paravertebral injections of a 0.5 per cent. solution of procain. They have not only an analgesic action but they also lower the tonus of the affected organ—especially the biliary passages.

Reinfection with Measles.—Starck reports on two cases of reinfection with measles.

Conservation of Malaria Blood.—Weeber tried to preserve malaria blood in leeches. It kept for two days, but the parasites then produced the disease in a form too attenuated for therapeutic purposes.

Cause and Treatment of Pruritus.—Haas believes in the endocrine cause of a group of pruritus cases. Roentgen irradiation has given good results. He points out that many of these patients enjoy the scratching. This factor has to be attacked by psychotherapy.

Zeitschrift für Krebsforschung, Berlin

22: 1-96 (Dec. 15) 1924

*Tar Cancer and Pituitary Extract. L. Seel.—p. 1.
*Carcinoma and Sarcoma. H. Schamoni.—p. 24.
*Metastases in Chicken Sarcoma. F. Pentimalli.—p. 62.
Elective Action of Virus of Chicken Sarcoma. Pentimalli.—p. 74.
*Roentgen Rays and Cholesterol Content of Tumors. A. H. Roffo and L. M. Correa.—p. 79.
*Cancer Studies. II. R. Erdmann.—p. 83.

Tar Cancer and Pituitary Extract.—Seel produced tar tumors, in all of his rabbits. The time of appearance of the tumor was distinctly retarded in animals which had been injected once a week with an extract of the posterior lobe of the pituitary, and the proportion of malignant tumors was

less. The further development of the cancer was not inhibited when the injections were continued.

Carcinoma and Sarcoma.—Schamoni publishes statistics on cancer and sarcoma based on 27,333 examinations. He finds that sarcoma affects quite frequently older persons, especially between 40-60, although he confirms its comparatively higher incidence before the age of 30.

Metastases in Chicken Sarcoma.—Pentimalli believes that metastases of chicken sarcoma may form both by the migration of its cells and by the circulating virus. The proliferation of a tissue after injury seems to be a point of predilection for the action of the virus.

Roentgen Rays and Cholesterol Content of Tumors.—Roffo and Correa found a decreased cholesterolemia in cancer patients after roentgen irradiation. If a sarcoma alone was irradiated—either in the rat or after it had been extirpated—its cholesterol content decreased after irradiation. If the whole rat was treated, the cholesterol increased. They believe that the action of the roentgen rays destroys the cholesterol which is necessary for the development of the cancer cells.

Cancer Studies.—Erdmann succeeded in obtaining pure cultures of cancer cells and of stroma cells. When each of them was grown for a longer time separately, no tumors were produced by implantation of the cultures. Such experiments succeed only when both stroma and cancer cells are cultivated for a short time in the plasma from tumor-bearing animals.

Zentralblatt für innere Medizin, Leipzig

45: 1081-1138 (Dec. 27) 1924

*Respiratory Pulse Changes. P. Engelen.—p. 1081.

Respiratory Pulse Changes.—Engelen emphasizes the exaggeration of the respiratory changes of the sphygmogram in nervous irritability. Bromids give good results. Potassium is contraindicated, because of its stimulating action on the parasympathetic.

Tijdschrift v. Vergelijk. Geneeskunde, Leyden

11: 1-104 (Dec.) 1924

*The Non-Fat Solids of Milk. De Waal.—p. 2.
*To Detect Previous Heating of Milk. E. Hekma.—p. 11.
Passage of Trypanosomes Through Intact Mucosa. Muijzert.—p. 33.
*Refrigeration of Trichina in Meat. P. H. Van Thiel.—p. 48.
Place of Bacillus Polymyxa in Bacteria System. Donker.—p. 78.

The Nonfat Solids in Milk.—De Waal declares that the formulas based on the specific gravity and the amount of fat in the milk are based on erroneous deductions. The specific gravity of the milk fat and of the solid nonfat constituents is not constant.

To Detect Previous Heating of Milk.—Hekma adds an equal volume of a 0.15 per cent. solution of trypan blue to the milk (filtered through cotton) and after letting it stand for ten minutes, centrifugates. The microscope shows that the cells in unheated milk do not take the stain and are of normal size. After heating, the cells take the stain proportionally to the intensity and the duration of the heating, or admixture of a preservative. He adds, "The test does not answer for heating only to 63 C. for twenty or thirty minutes or less, any more than Frost's method does, although Frost asserts the contrary."

Killing of Trichina by Refrigeration.—Van Thiel's experimental research showed widely varying resisting powers of the trichina to cold, but, as a rule, exposure to minus 10 C. (14 F.) killed the trichina encysted in the muscles of guinea-pigs.

Lijecnicki Vjesnik, Zagreb (Agram)

46: 405-548 (Oct.) 1924. Partial Index

*Diagnosis of Atresia of Rectum. M. Cackovic.—p. 407.
Treatment of Trachoma. Botteri and Derkac.—p. 418.
Treatment of Anthrax. B. Pericic.—p. 421.
Ethyl Chlorid in Treatment of Fusospirillar Infection Outside of the Mouth. Breitenfeld.—p. 426.
*Diabetes Insipidus. M. Grossmann and L. Neumann.—p. 435.
*Protein Therapy of Diabetes. M. Grossmann and Sandor.—p. 444.
Case of Subacute Microlymphoidocyte Leukemia. M. Krmpotic.—p. 459.
Intermediate Zone in Spinal Cord of Mammals. S. Poljak.—p. 468.
*Hyperemia of the Liver. K. Radonicic.—p. 483.
Statistical Study of Eclampsia. S. Silovic.—p. 532.
Isolated Stabwound of Spleen from Right Side. M. Zsiga.—p. 545.

Roentgen Rays in Diagnosis of Atresia of the Anus and Rectum.—This article in English opens the special number of the organ of the Jugoslavian Medical Association in honor of its semicentennial. Cackovic expatiates on the important aid rendered by the roentgen rays in diagnosis and as a guide to surgical correction in four cases of imperforate anus. The infants were from 1 to 14 days old. The intestine cast a remarkably clear shadow in these infants; they were examined first erect, and then, after an interval of reclining with the pelvis raised, they were examined again with the head downward. This empties the lower bowel and the gas bubble becomes apparent.

Diabetes Insipidus.—This article (in German) emphasizes the great improvement under pituitary treatment in five cases of tenacious diabetes insipidus. It seems to be to this disease what insulin is to diabetes mellitus. "When polyuria does not respond to pituitary treatment, the affection is not diabetes insipidus." In one case the pituitary seemed to be of normal shape and size but necropsy revealed its center a cancerous mass.

Protein Therapy of Diabetes Mellitus.—Sixteen diabetics and twelve nondiabetics were given protein therapy, and the effects, it is said, encourage further treatment of diabetes in this line to supplement insulin and dietetic measures, or even as a substitute for insulin in mild cases.

Hyperemia in the Liver.—Radonicic presents data to sustain his assertion that the liver tissue has a pumping action, and is the main factor in the circulation in the portal vein region. He regards the liver as an important element in what some call the prekidney function.

Ugeskrift for Læger, Copenhagen

86: 877-898 (Nov. 13) 1924

*Multiple Neuritis in Child. C. Gram.—p. 877.
"Anthrax from Shaving Brushes." Thomsen and Jensen.—p. 880.
"Formaldehyd Sterilizer." M. Seedorf.—p. 880.

Polyneuritis as a Deficiency Disease.—Gram's analysis of the case of multiple neuritis described, in a boy of 8, interprets it, by exclusion, as an avitaminosis affection. Dietetic treatment, as for beriberi, was followed by marked improvement in three weeks. In a year, slight sluggishness of the tendon reflexes was the only trace left of the crippling polyneuritis.

86: 899-922 (Nov. 20) 1924

Uterine Syringe to Prevent Conception. J. S. Møller.—p. 899.
Lumbar Puncture with Fine Cannulas. M. Norn.—p. 901.

86: 923-936 (Nov. 27) 1924

*Technic for Lumbar Puncture. N. Antoni.—p. 923.
Chance for Danish Physicians in the United States. H. Bjarnesen.—p. 927.
Anteconceptional Measures. H. B. Dahl.—p. 928.

Technic for Lumbar Puncture.—Antoni uses a needle of only 0.45-0.50 mm. diameter for lumbar puncture. In several hundred cases, with this fine needle he has never had any appreciable by-effects. The needle is introduced inside a cannula, until the meninges are reached. The puncture with this fine needle is so minute that the patient is allowed to ride home at once on the promise to recline for thirty-six hours.

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Roentgen-Ray Treatment of Actinomycosis. A. Christensen and T. Eiken.—p. 937.
*Means to Dissolve Calculi in Body Cavities. H. Eiken.—p. 939.
The Spinal Fluid in Sciatica. J. Helweg.—p. 940.
*Committee Report on Chiropractic.—p. 943.

To Dissolve Calculi in Body Cavities.—Eiken calls attention to his success in removing tartar on the teeth with a ferment. The tartar crumbled and loosened so that it could be easily scraped off after the use of a tooth paste containing pancreatic juice.

Committee Report on Chiropractic Presented to Danish Medical Association.—The proceedings against a member investigated by this committee were mentioned in the News department Jan. 31, 1925.